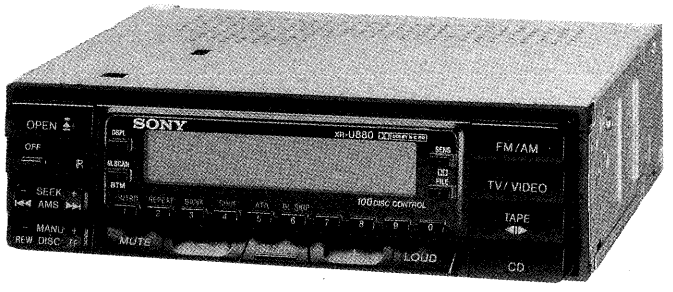
XR-U880

SERVICE MANUAL

US Model
Canadian Model
E Model



Model Name Using Similar Mechanism	XR-7500
Tape Transport Mechanism Type	MG-55U-31

SPECIFICATIONS

Cassette player section

Tape track: 4-track 2-channel stereo
Frequency response: 30 – 20,000 Hz

Signal-to-noise ratio

Cassette type	Dolby B NR	Dolby C NR	Dolby NR off
TYPE II, IV	66 dB	76 dB	58 dB
TYPE I	63 dB	73 dB	55 dB

Wow and flutter: 0.09% (WRMS)

Tuner section

FM

Tuning range: 87.9—107.9MHz (US, Canadian model)
87.5—108.0MHz (E model)
External antenna connector
Antenna terminal: External antenna connector
Intermediate frequency: 10.7 MHz
Usable sensitivity: 8 dBf (75 ohms)
Selectivity: 75 dB at 400 kHz
Signal-to-noise ratio: 65 dB (stereo), 70 dB (mono)
Harmonic distortion at 1 kHz: 0.5% (stereo), 0.3% (mono)
Separation: 35 dB at 1 kHz
Frequency response: 30 – 15,000 Hz
Capture ratio: 2 dB

AM

Tuning range: US, Canadian model:
530—1,710kHz
E model:
531—1,602kHz
(at 9kHz step)
530—1,620kHz
(at 10kHz step)
AM tuning interval:
9kHz/10kHz switchable
Antenna terminal: External antenna connector
Intermediate frequency: 450 kHz
Sensitivity: 30μV

General

Output lead: Power antenna relay control lead
Power amplifier control lead
Tone controls: Bass ±10 dB at 100 Hz
Treble ±10 dB at 10 kHz
Loudness: +10 dB at 100 Hz
+6 dB at 10 kHz
Power requirements: 12 V DC car battery (negative ground)
Dimensions (without bracket): Approx. 178 × 50 × 160 mm ($7^1/_8 \times 2 \times 6^1/_8$ inches) (w/h/d), not incl. projecting parts and controls
Mounting dimensions: Approx. 182 × 53 × 143 mm ($7^1/_4 \times 2^1/_8 \times 5^3/_4$ inches) (w/h/d), not incl. projecting parts and controls
Weight: Approx. 1.5 kg (3 lb 5 oz)
Accessories supplied: Mounting hardware (1 set)
UNILINK cable (1)
Power input lead (1)
Remote commander (1)
Size AA (R6) battery (2)
Carrying case (1)

Design and specifications subject to change without notice.

使用時は添付資料も参照のこと
Refer to the additional documents

FM/AM CASSETTE CAR STEREO

SONY®

Features

General

- **Full-logic feather touch system** for easy and smooth operation.
- **Large-and-wide-sized LCD** for displaying the operation modes clearly.
- Switchable **two color illumination (amber and green).** (page 7)
- Supplied with a **wireless remote commander.** (page 8)
- Provided with a **digital 12-hour clock.** (page 13)
- **Telephone-mute function for** decreasing the volume automatically with a telephone call.
- **Detachable-front panel** enables you to take the front panel away with you when you leave your car. (page 12)
- **Caution alarm** will be activated if you turn off the ignition key without removing the front panel from the unit. (page 12)

Tuner section

- **SSIR (Sony Super Interference Rejection) PLL synthesizer** tuner.
- Provided with a **FM diversity reception** system for a better radio reception. (page 11)
- Up to 30 stations can be preset. 20 stations for FM and 10 stations for AM. (page 25)
- **BTM (Best Tuning Memory) function** automatically selects and stores the stations with strong signals on the preset buttons in order of frequency. (page 25)
- **Station memo function** for displaying the name of each radio station. (page 29)

Cassette deck section

- **Super-laminated head** for clear treble sound.
- **Auto-reverse function** for listening to both sides of a cassette continuously.
- **Auto-metal selection function** for detecting metal and CrO_2 tapes and automatically adjusting the deck to each tape type. (page 16)
- **Dolby B and C NR* system** reduces tape hiss noises during the tape playback. (page 16)
- **AMS (Automatic Music Sensor) function** for automatically locating the beginning of a selection during the tape playback. (page 17)
- **Intro scan function** for playing the first 10 seconds of each track. (page 19)
- **Repeat play function** for listening to a currently playing track repeatedly. (page 19)
- **Blank skip function** for automatically skipping blank spaces during the tape playback. (page 20)
- **ATA (Automatic Tuner Activation)** for automatically turning on the tuner during the fast-forwarding or rewinding of a tape. (page 20)

* Dolby noise reduction manufactured under license from Dolby Laboratories Licensing Corporation. "Dolby" and the double-D symbol DD are trademarks of Dolby Laboratories Licensing Corporation.

CD changer control section

(when the optional Sony CD changers are connected)

- **Direct disc selection** for selecting discs directly with the numerical keys. (page 35)
- **Intro scan function** for playing the first 10 seconds of each track of every disc. (page 39)
- **Repeat play function** for playing a track, a disc, or a changer repeatedly. (page 38)
- **Shuffle play function** for playing tracks in random order. (page 37)
- **Manual search function** for locating a desired point in a track. (page 36)
- **Disc memo function** for displaying the title of each disc and setting a play/skip mode on each track. (page 40)

TV tuner section

(when the optional TV monitor and hide-away TV tuner are connected)

- **UNILINK system** enables an optional video deck to be controlled by its remote controller through this unit.
- **Station memo function** for displaying the names of TV stations on the TV screen. (page 55)
- **Simultaneous play function** for listening to CD or cassette playback while watching TV or video. (page 57)
- **List up function** enables CD titles and the contents of preset memory to be displayed on the TV monitor. (page 49)

INFORMATION

This equipment generates and uses radio frequency energy and if not installed and used properly, that is, in strict accordance with the manufacturer's instructions, may cause interference to radio and television reception. It has been type tested and found to comply with the limits for a Class B computing device in accordance with the specifications in Subpart J of Part 15 of FCC Rules, which are designed to provide reasonable protection against such interference in a residential installation. However, there is no guarantee that interference will not occur in a particular installation.

If this equipment does cause interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

Reorient the receiving antenna
Relocate the equipment with respect to the receiver
Move the equipment away from the receiver
Plug the equipment into a different outlet so that equipment and receiver are on different branch circuits.

If necessary, the user should consult the dealer or an experienced radio/television technician for additional suggestions. The user may find the following booklet prepared by the Federal Communications Commission helpful: "How to Identify and Resolve Radio-TV Interference Problems". This booklet is available from the U.S. Government Printing Office, Washington, DC 20402, Stock No. 004-000-00345-4.

The shielded interface cable recommended in this manual must be used with this equipment in order to comply with the limits for a computing device pursuant to Subpart J of Part 15 of FCC Rules.

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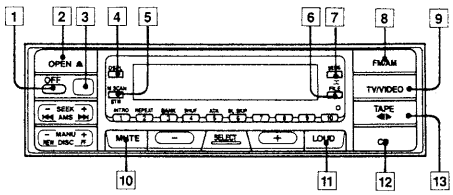
SECTION 1
GENERAL

This section is extracted from instruction manual.

US, Canadian model :

Location and Function of Controls

Main Unit



Refer to the pages in ● for details.

1 **OFF button**
Press to turn off the unit.

2 **OPEN/⏏ (front panel open/eject) button** ⑫ ⑬

3 **Receptor for the remote commander**

4 **DSPL (display change/time set) button** ⑱ ⑲ ㉑ ㉒ ㉓ ㉔ ㉕ ㉖

5 **M.SCAN/BTM (memory scan/best tuning memory) button** ㉔ ㉕

6 **FILE (custom-file) button** ㉗ ㉘ ㉙ ㉚ ㉛ ㉜

7 **SENS/□□ (sensitivity/Dolby NR) button** ⑮ ㉒

8 **FM/AM (radio on/band select) button** ㉑

9 **TV/VIDEO (television/video select) button** ㉝ ㉞

10 **MUTE button**
Press to mute the sound momentarily. Press again to restore the same volume level as before. This button will be also caceled in the following cases:
— when the + or OFF button is pressed.
— when ejecting a cassette by pressing the OPEN/⏏ button during tape playback.
— when the ignition key of your car has been turned off to the OFF position and more than 8 seconds have elapsed.

11 **LOUD (loudness) button**
Press to reinforce bass and treble especially when listening at a low volume level. To disengage the button, press it again.

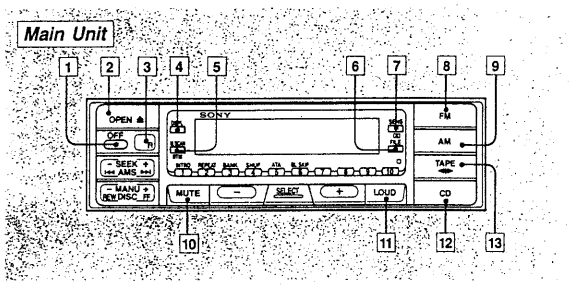
12 **CD (disc play / CD changer select) button** ㉟ ㊱

13 **TAPE/◄II► (playback / transport direction change) button** ⑭ ⑯

E model :

Location and Function of Controls

Main Unit



Refer to the pages in ● for details.

1 **OFF button**
Press to turn off the unit.

2 **OPEN/⏏ (front panel open/eject) button** ⑫ ⑬

3 **Receptor for the remote commander**

4 **DSPL (display change/time set) button** ⑱ ⑲ ㉑ ㉒ ㉓ ㉔

5 **M.SCAN/BTM (memory scan/best tuning memory) button** ㉕

6 **FILE (custom-file) button** ㉖ ㉘ ㉙ ㉚

7 **SENS/□□ (sensitivity/Dolby NR) button** ⑮ ㉒

8 **FM (radio on) button** ㉑

9 **AM (radio on) button** ㉑

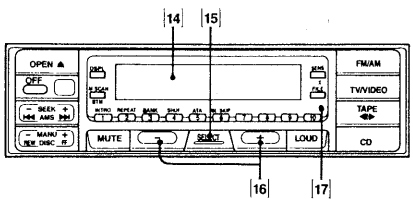
10 **MUTE button**
Press to mute the sound momentarily. Press again to restore the same volume level as before. This button will be also caceled in the following cases:
— when the + or OFF button is pressed.
— when ejecting a cassette by pressing the OPEN/⏏ button during tape playback.
— when the ignition key of your car has been turned off to the OFF position and more than 8 seconds have elapsed.

11 **LOUD (loudness) button**
Press to reinforce bass and treble especially when listening at a low volume level. To disengage the button, press it again.

12 **CD (disc play / CD changer select) button** ㉝ ㉞

13 **TAPE/◄II► (playback / transport direction change) button** ⑭ ⑯

Common :



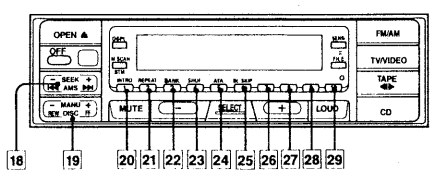
14 **Display window**

15 **SELECT (control mode select) button**
Press to select the desired control mode: BAS (bass), TRE (treble), BAL (balance), FAD (fader), or VOL (volume).

Display window	Control mode	Press (−)	Press (+)
BAS	Bass control	For less bass	For more bass
TRE	Treble control	For less treble	For more treble
BAL	Balance control	To decrease the right-speaker volume	To decrease the left-speaker volume
FAD	Fader control	To decrease the rear-speaker volume	To decrease the front-speaker volume
VOL	Volume control	For less volume	For more volume

16 **(volume/bass/treble/balance/fader control) button**
(−)(+) button normally functions as the volume control. To adjust other modes, press (−) or (+) within three seconds after selecting the desired mode with the SELECT button. The control mode automatically goes back to the volume control mode in three seconds.

17 **Reset button**
Press this button when you use this unit for the first time, when you have changed the car battery, or when the buttons of this unit do not function.



	During tape playback	During disc play	During radio reception	During TV reception
18	AMS (automatic music sensor) button ⑰ ㉟		SEEK (automatic tuning) button ㉔ ㉕	
19	FF/REW (fast-forward/rewind) button ㉟	DISC/MANU (disc change/manual search) button ㉟ ㊲	MANU (manual tuning) button ㉔ ㉕	
20	INTRO (track cue play) ㉛ ㉜			
21	REPEAT (repeat play) button ㉜			
22	—	BANK button ㊴		
23	—	SHUF (shuffle play) button ㊲		
24	ATA (automatic tuner activation) button ㉘	—	Preset buttons ㉗ ㉘ ㉙ ㉚	
25	BL.SKIP (blank skip) button ㉘	—		
26	—	—		
27	—	—		
28	—	—		
29	—	—		

The buttons 20 — 29 function as direct disc selection buttons as well during disc play. (See page 35)

Changing the illumination color

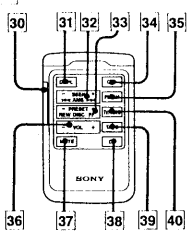
Press INTRO (1) while pressing the SELECT button.

Muting a beep sound

Press BL.SKIP (6) while pressing the SELECT button. To obtain the beep sound again, press these buttons once more.

US, Canadian model :

Remote Commander



Buttons sharing the same functions as those on the main unit*

31 **DSPL (display change) button** ❸ ⓮ ㉖ ❷ ❻ ⓰ ㉕ ❶

When the hide-away TV tuner (sold separately) is connected, this button functions as a switch for changing the displays on the TV screen. If the TV tuner is not connected, the button functions as same as the DSPL button on the main unit.

32

During tape playback	During disc play
AMS (automatic music sensor) button ⓱ ㉔	
During radio reception	During TV reception
SEEK (automatic tuning) button ㉑ ㉓	

34 **OFF button**

35 **FM/AM (radio on/band select) button** ㉑

37 **MUTE button**

38 **CD (disc play/CD changer select) button** ㉞ ㉟

39 **TAPE (playback/transport direction change) button** ⓭ ⓯

40 **TV/VIDEO (television/video select) button** ㉚ ㉛

* Some of these buttons function differently when the unit is in the simultaneous play mode. See page 57 for the details.

Different function buttons

30 **M.ILL (memory illumination) switch**
To illuminate the buttons on the remote commander, slide down this switch. The illumination goes off automatically after about 15 seconds.

33

During tape playback	During disc play
FF/REW (fast forward/ rewind) button ⓰	**DISC (disc change) button** ㉕ ㉔
During radio reception	During TV reception
PRESET – / + (preset search) button ㉘	

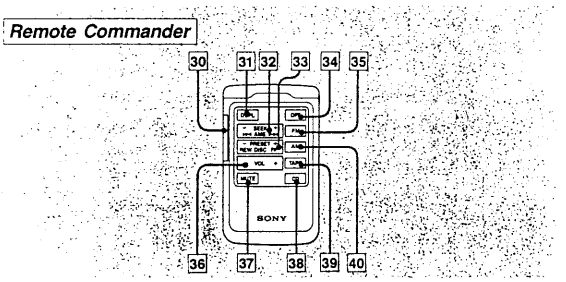
You cannot do the manual search and manual tuning with the remote commander.
When the unit is in the simultaneous play mode, the PRESET button functions only as a preset search button.

36 **VOL (volume) button**
This button adjusts only the volume level.

When the POWER SELECT switch is set to OFF, the unit cannot be operated with the remote commander unless one of the FM/AM, TV/VIDEO, TAPE, or CD buttons of the unit is pressed or a cassette is inserted to activate the unit first.

E model :

Remote Commander



Buttons sharing the same functions as those on the main unit

31 **DSPL (display change) button** ⓭ ⓮ ❷ ㉑ ⓲ ㉓ ⓳

	During tape playback	During disc play	During radio reception
32	**AMS (automatic music sensor) button** ⓱ ㉔		**SEEK (automatic tuning) button** ㉑

34 **OFF button**

35 **FM (radio on) button** ㉑

37 **MUTE button**

38 **CD (disc play/CD changer select) button** ㉞ ㉟

39 **TAPE (playback/transport direction change) button** ⓭ ⓯

40 **AM (radio on) button** ㉑

Different function buttons

30 **M.ILL (memory illumination) switch**
To illuminate the buttons on the remote commander, slide down this switch. The illumination goes off automatically after about 15 seconds.

	During tape playback	During disc play	During radio reception
33	**FF/REW (fast forward/rewind) button** ⓰	**DISC (disc change) button** ㉕	**PRESET – / + (preset search) button** ㉘

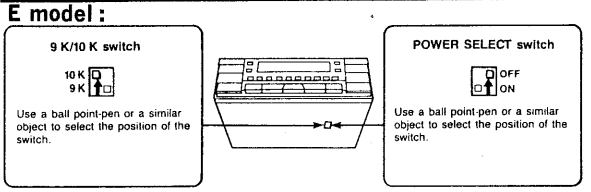
You cannot do the manual search and manual tuning with the remote commander.

36 **VOL (volume) button**
This button adjusts only the volume level.

When the POWER SELECT switch is set to OFF, the unit cannot be operated with the remote commander unless one of the FM, AM, TAPE, or CD buttons of the unit is pressed or a cassette is inserted to activate the unit first.

Switches Requiring Initial Settings

E model :


9 K/10 K switch
10 K
9 K
Use a ball point-pen or a similar object to select the position of the switch.
POWER SELECT switch
OFF
ON
Use a ball point-pen or a similar object to select the position of the switch.

When the Unit is Used in a Car with No Accessory Position on the Ignition Key
—POWER SELECT switch

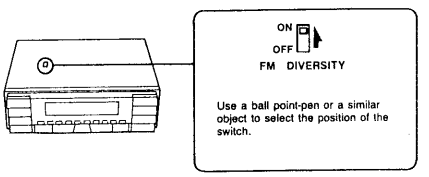
The illumination on the front panel is factory-set to be turned on even when the unit is not being played. However, this setting may cause some car battery wear if the unit is used in a car with no accessory position on the ignition key. To avoid this battery wear when using the unit in such a car, set the POWER SELECT switch located on the bottom to OFF, then press the reset button. The illumination is reset to stay off while the unit is not being played.

Notes
- The caution alarm for the front panel is not activated when the POWER SELECT switch is set to the OFF position.
- When the POWER SELECT switch is set to OFF, the unit cannot be operated with the remote commander unless the unit is activated first. (See page 8)

E model :

If the AM Frequency Allocation is 10 kHz Interval in Your Country — 9K/10K switch

The AM tuning interval is factory-set to 9 kHz. If the frequency allocation system of your country is based on 10 kHz interval, **set the 9K/10K switch loccated on the bottom to the 10K position, then press the reset button.**



When an FM Diversity Antenna is Used
—FM DIVERSITY switch

This unit can be connected with diversity antennas. If you use this unit with the diversity antennas, set the FM DIVERSITY switch located on the top exterior of the unit to ON to activate the diversity system.

When you do not use the FM diversity antennas

If you wish to connect a conventional rod antenna, be sure to connect it to the antenna connector of the unit marked "MAIN ", and set the FM DIVERSITY switch to OFF. Never connect the antenna to the connector marked "SUB", otherwise if the FM DIVERSITY switch is set to ON, the radio signals may not be received properly.

Notes
- The diversity system functions only when receiving FM broadcasts and does not function on AM broadcasts.
- For the details, see the Installation/Connections manual of this unit or the instruction manual of the diversity antennas.

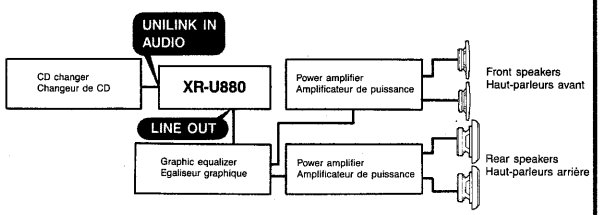
What is the diversity reception system?

The car radio reception is greatly affected by the location of the car. When you are driving in a mountainous area or between buildings, the reception of signals tends to be cut off and noise occur due to rapid changes in signal strength. The diversity reception system with two connected antennas offers an improvement to this car radio reception. With this system, the reception levels of the two antennas are always monitored and better of the two is automatically selected. The car radio reception will be improved.

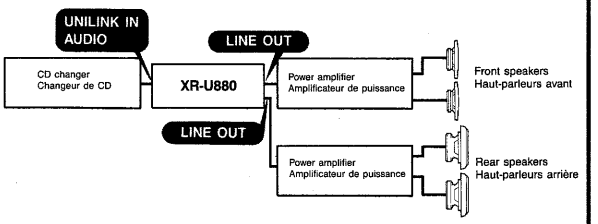
Connections

Connection Diagram / Schéma de connexion

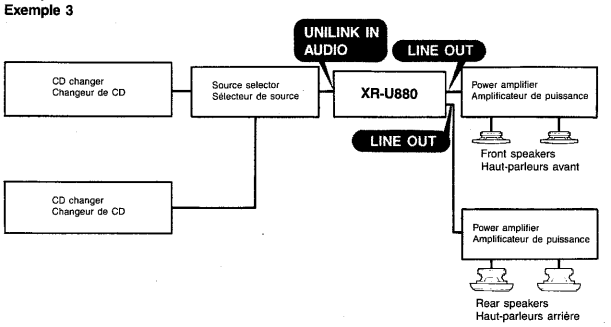
Example 1
Exemple 1



Example 2
Exemple 2



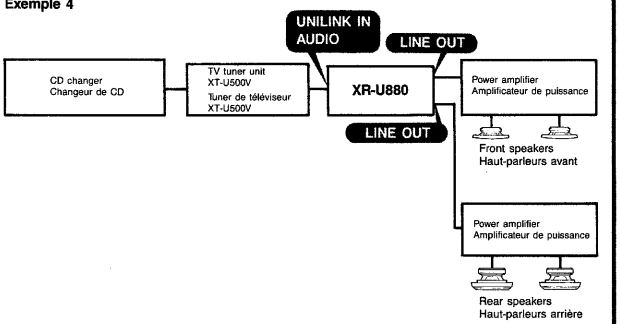
Example 3
Exemple 3



If you connect two or more CD changers, the source selector XA-U20 or XA-U40 (sold separately) is required.

Si deux changeurs de CD ou plus sont utilisés, un sélecteur de source XA-U20 ou XA-U40, (vendu séparément), est requis.

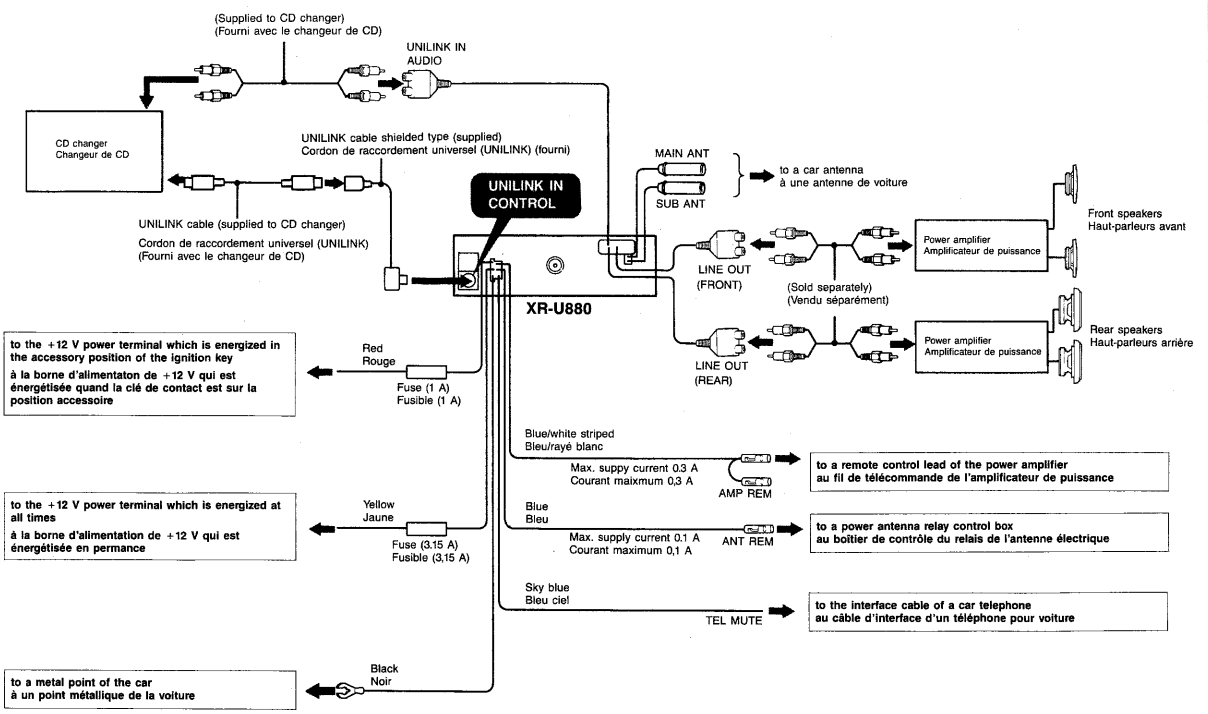
Example 4
Exemple 4



See the operating instructions of the XT-U500V (sold separately) for details.

Se reporter au mode d'emploi du XT-U500V (vendu séparément) pour plus de détails.

Connections of Example 2 / Connexions de l'exemple 2


(Supplied to CD changer)
(Fourni avec le changeur de CD)
UNILINK IN
AUDIO
CD changer
Changeur de CD
UNILINK cable shielded type (supplied)
Cordon de raccordement universel (UNILINK) (fourni)
UNILINK IN
CONTROL
MAIN ANT
SUB ANT
to a car antenna
à une antenne de voiture
UNILINK cable (supplied to CD changer)
Cordon de raccordement universel (UNILINK)
(Fourni avec le changeur de CD)
XR-U880
LINE OUT
(FRONT)
(Sold separately)
(Vendu séparément)
Power amplifier
Amplificateur de puissance
Front speakers
Haut-parleurs avant
LINE OUT
(REAR)
Power amplifier
Amplificateur de puissance
Rear speakers
Haut-parleurs arrière
to the +12 V power terminal which is energized in the accessory position of the ignition key
à la borne d'alimentaton de +12 V qui est énergétisée quand la clé de contact est sur la position accessoire
Red
Rouge
Fuse (1 A)
Fusible (1 A)
Blue/white striped
Bleu/rayé blanc
Max. suppy current 0.3 A
Courant maixmum 0,3 A
AMP REM
to a remote control lead of the power amplifier
au fil de télécommande de l'amplificateur de puissance
to the +12 V power terminal which is energized at all times
à la borne d'alimentation de +12 V qui est énergétisée en permance
Yellow
Jaune
Fuse (3.15 A)
Fusible (3,15 A)
Blue
Bleu
Max. supply current 0.1 A
Courant maximum 0,1 A
ANT REM
to a power antenna relay control box
au boîtier de contrôle du relais de l'antenne électrique
Sky blue
Bleu ciel
TEL MUTE
to the interface cable of a car telephone
au câble d'interface d'un téléphone pour voiture
to a metal point of the car
à un point métallique de la voiture
Black
Noir

Press the reset button on the front panel after completing the connections.

Les connexions achevées, appuyer sur la touche de réinitialisation sur le panneau avant.

Notes on the control leads

- The power antenna control lead (blue) supplies +12 V DC when you turn on the tuner or when you activate the ATA (Automatic Tuner Activation) function.
- A power antenna without relay box cannot be used with this unit. For details about the power antenna, refer to its instructions manual.

Remarques sur les fils de contrôle

- Le fil de contrôle de l'antenne électrique (bleu) fournit un courant continu de 12 volts quand le tuner est mis sous tension, ou quand la fonction ATA (activation automatique du tuner) est mise en service.
- Une antenne électrique sans boîtier de relais ne peut être utilisée avec cet appareil. Pour les détails sur l'antenne électrique, se reporter à son mode d'emploi.

Installation

Precautions

- Choose the mounting location carefully so that the unit will not interfere with the normal driving functions of the driver.
- Avoid installing the unit where it would be subject to high temperatures, such as from direct sunlight or from hot air from the heater, or where it would be subject to dust, dirt, or excessive vibration.
- Use only the supplied mounting hardware for a safe and secure installation.

Mounting angle adjustment
Adjust the mounting angle to less than 20°.

Installation

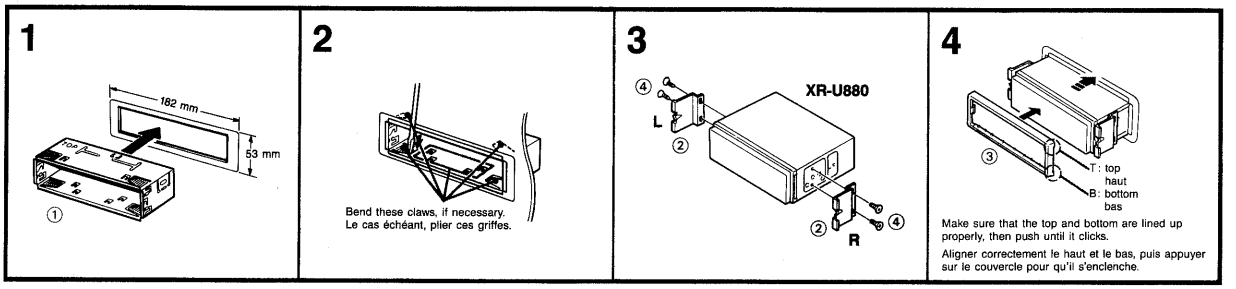
Précautions

- Choisir soigneusement l'emplacement du montage, de manière que l'appareil ne gêne nullement les mouvements du conducteur.
- Eviter d'installer l'appareil là où il serait soumis à des températures élevées, comme en plein soleil ou à proximité d'une bouche d'air chaud, ni ou il serait soumis à de la poussière, saleté ou vibrations violentes.
- Pour garantir un montage sûr, n'utiliser que le matériel fourni.

Réglage de l'angle de montage
Ajuster l'inclinaison à un angle inférieur à 20°.

Mounting Example

Installation in the dashboard

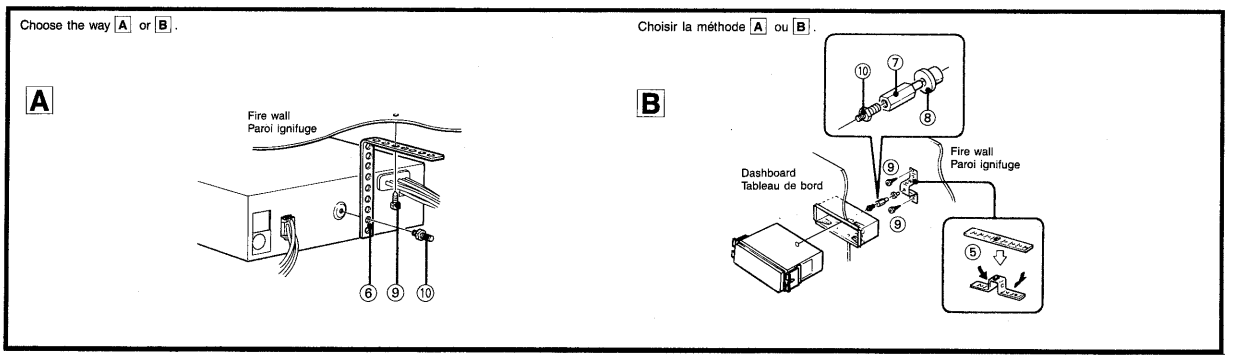


Exemple de montage

Encastrement dans le tableau de bord

To Support the Unit

Choose the way A or B.



Pour installer l'appareil

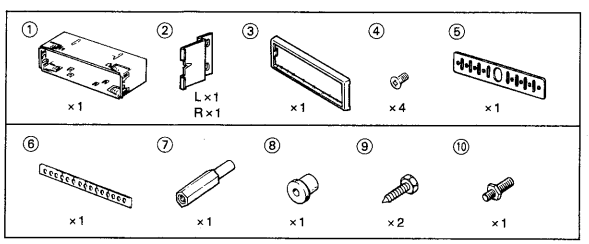
Choisir la méthode A ou B.

Supplied Mounting Hardware

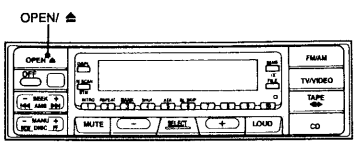
The letters in the list are keyed to those in the instructions.

Matériel de montage fourni

Les lettres de la liste correspondent à celles mentionnées dans les procédures.



Detaching and Attaching the Front Panel

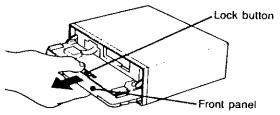


The front panel of this unit can be detached in order to prevent the unit from being stolen.

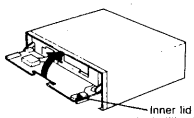
Detaching the Front Panel

1 **Press the OPEN/⏏ button and open up the front panel.**

2 **Pull out the panel while pressing the lock button located on the back side of the panel.**



3 **After detaching the front panel, close the inner lid.**
It automatically closes when you lift it lightly.



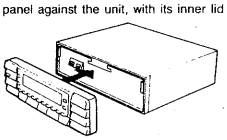
Be sure not to drop the front panel when detaching it from the unit.

Caution alarm
If you turn your ignition key to the OFF position without removing the front panel, the caution alarm will be activated and a beep tone will be heard for a few seconds. (Only when the POWER SELECT switch is set to the ON position.)

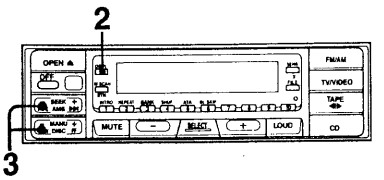
Notes
- The front panel and the inner panel close automatically, after about 30 seconds if it is left open. When the front panel is opened, none of the function buttons except the OPEN/⏏ button will function.
- Make sure that the front panel is right way up when attaching it to the unit as it cannot be attached upside down.
- Do not press the front panel hard against the unit when attaching it to the unit. It can be easily attached by pressing it lightly against the unit.
- When you carry the front panel with you, put it in the supplied carrying case.
- If you keep the OPEN /⏏ button pressed for more than two seconds, the front panel will open without ejecting the cassette.

Attaching the Front Panel

Push the front panel against the unit, with its inner lid closed, until it clicks.



Setting the Clock



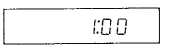
The clock has a 12-hour digital indication.

For example, set it to 10:08.

1 **Turn the ignition key to the ON position.**

2 **Press the DSPL button if the clock indication does not come on.**

DSPL



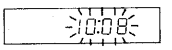
3 **Press the DSPL button for more than 2 seconds.**

DSPL

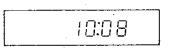
While holding down the DSPL button,

Press SEEK **to set the hour digits**
(to go back) (to go forward)

Press MANU **to set the minute digits**
(to go back) (to go forward)

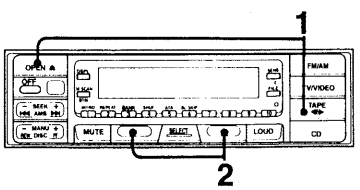


4 **The clock starts activating when you take your finger off the DSPL button.**

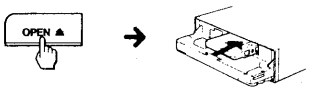


Notes
- You cannot set the clock with the remote commander.
- If the POWER SELECT switch of the unit is set to the OFF position, the clock cannot be set unless the power is turned on. Set the clock after you turn on the radio, start the CD play, or play back a tape.

Listening to the Tape Playback



1 **Insert a cassette into the cassette slot.**



When a cassette is inserted, the front panel automatically closes and the playback starts.

If a cassette is already inserted

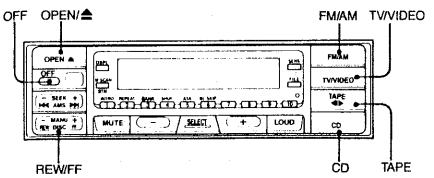
The ⌧ indication appears on the display window if a cassette is inserted.

2 **Adjust the volume with ⊖ or ⊕.**

Getting the clock indication during a tape playback

DSPL

Press again to return to the previous indication.

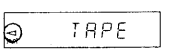


Other Operations

To fast-forward	→ MANU
To rewind	→ MANU
To listen to the reverse side of a cassette	→ TAPE

Tape transport direction indication

The side facing up is being played.

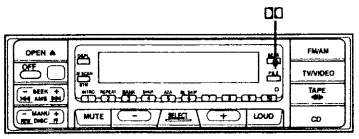


The side facing down is being played.

Stopping the Tape Playback

To stop the tape and listen to the radio	→ FM/AM
To stop the tape and listen to the CD	→ CD
To stop the tape and watch TV or video	→ TV/VIDEO
To stop the tape and turn the unit off	→ OFF
To listen to the tape again	→ TAPE
To eject the tape	→ OPEN ⏏

Notes on the OPEN/⏏ button
- If you leave a cassette in the cassette slot for more than 30 seconds after pressing the OPEN/⏏ button, the unit will automatically take in the cassette and closes front panel.
- When the front panel is opened, none of the control buttons except the OPEN/⏏ button will function. You cannot operate the remote commander either.
- If you wish to close the front panel without inserting a cassette to the unit, lift up the front panel gently with your finger and it will close automatically.

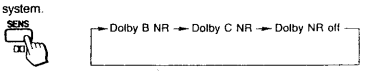


Auto-metal Selection Function

This unit has an auto-metal selection function in which the unit automatically detetcts normal, CrO_2 and metal tapes. The deck will be adjusted just by inserting a cassette into the slot. When you insert either metal or CrO_2 cassette, the "METAL" indication will come on the display window for a few seconds.

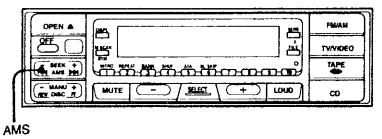
Listening to a Tape Recorded in the Dolby-NR System

This unit adapts to the tapes recorded in the Dolby B and Dolby C NR system.



The Dolby noise reduction system reduces the hiss noises which occur during the tape playback in the treble and bass areas.
This system emphasizes the treble area during the recording and returns it to the original level at the playback.
Therefore, when you listen to the tapes which are recorded in the Dolby NR system, be sure to use the Dolby NR system during a playback as well.

Locating a Desired Track —AMS Function



The AMS (Automatic Music Sensor) enables you to locate the starting positions of up to 9 tracks.

During playback, press the AMS button for the same number of times as the number of tracks you wish to skip.

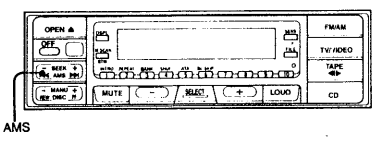
To locate the beginning of the tracks ahead →

To locate the beginning of the previous tracks →

Be sure to include the current track in the number of the tracks you wish to skip.

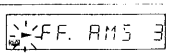
The AMS may not function properly and the track starting positions may not be located in the following cases:
- —Tapes which contain noises between the tracks are used.
- —Tapes which contain less than 4 second blank spaces in between the tracks are used.
- —When you press the AMS button immediately before or after the track which you wish to locate.

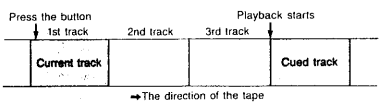
The unit may consider the following as the blank spaces between tracks and start the playback:
- —Long silent music sections on a track.
- —Quiet sections or a continuous low volume sound on a track.
- —Tracks which contain a gradual increase and decrease of the sound volume.



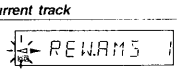
Examples of Locating the Beginning of a Track

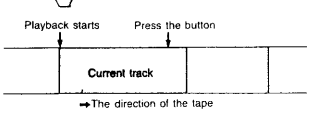
Cueing the track after skipping three tracks

Press three times. 

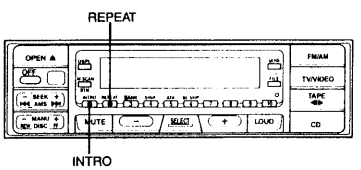


Cueing the beginning of the current track

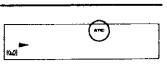
Press once. 



Playing in Other Modes



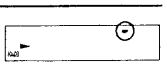
Searching for a Desired Track by Listening to the First 10 Seconds of Each Track —Intro Scan Function

During playback 

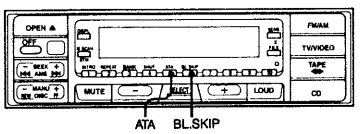
The first 10 seconds of all the tracks will be played in order from the next track.
When you find the track of your choice, press the button again. The deck will go back to the normal mode.

Note
The intro scan function will be canceled if you turn off the unit by pressing the OFF button or turning the ignition key to the OFF position and leaving it for more than 8 seconds. However the blank skip and ATA function will not be canceled unless each button is pressed once again.

Listening to the Currently Playing Track Repeatedly —Repeat Play Function



When the track is over, it will return to the beginning and will be repeated again. To cancel this mode, press the button again.



Turning on the Radio While the Tape is Being Fast-wound—ATA Function

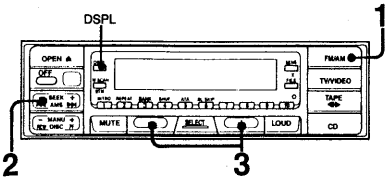
If you press either FF or REW during the tape playback, the radio will come on automatically. When the tape playback starts, the radio will be turned off automatically. To cancel the mode, press the button again.

Skipping Blank Spaces of the Tape Automatically During Tape Playback
—Blank Skip Function

If there is a blank space longer than 8 seconds on a tape, the unit automatically fast forwards the tape to the next track and the playback will start. To cancel the mode, press the button again.

Getting a radio frequency indication on the display window while the radio is turned on using the ATA function
Press the DSPL button several times. The frequency of the last radio program received or the name of the last station received will be indicated on the display window for a few seconds.

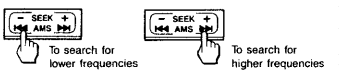
Searching for the Stations Automatically
—Automatic Tuning



If you do not know the frequency of the station you wish to tune into, it is useful to use the Automatic Tuning function.

1 **Select the desired band from FM1, FM2, and AM.**
Each time the button is pressed, it changes in the order of FM1 ➡ FM2 ➡ AM.

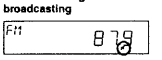
2 **Press – SEEK + button.**



The scanning stops when a station is received. Press the button repeatedly until the desired station is received.

3 **Adjust the volume with ⊖ or ⊕.**

While receiving FM broadcasting

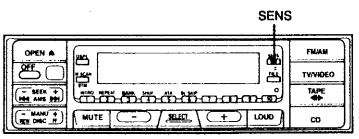


The "ST" indication will appear when an FM stereo program with sufficient signal strength is tuned in. The program will be received in stereo.

Getting the clock indication while listening to the radio
Press the DSPL button. Each time you press the button, the display mode of this unit will change as follows:

Station name display mode*
↓
Frequency display mode
↓
Clock display mode
↓

*Refer to page 30 for the station name display mode.



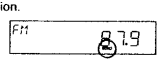
Avoiding the Automatic Tuning from Stopping on Stations Too Frequently
—Local Seek Mode

Press SENS to get the LCL indication.

The mode changes to that of the local seek mode where only the stations with relatively strong signals are tuned in. It functions only when the Automatic Tuning is in operation.

If FM Stereo Broadcasting is Difficult to Receive—Monaural Mode

Press SENS to get the MONO indication.



The sound improves, but it will become monaural.

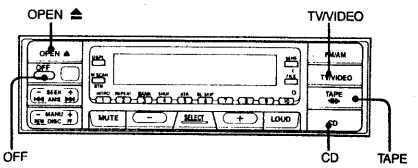
When you press the SENS button, the mode changes as follows:

While receiving FM broadcasting

LCL
↓
MONO
↓
canceled (normal mode)

While receiving AM broadcasting

LCL
↓
canceled (normal mode)



Other Operations

To stop the radio and listen to a tape playback

If a cassette is loaded → TAPE

If a cassette is not loaded → OPEN ⏏

To stop the radio and listen to a CD → CD

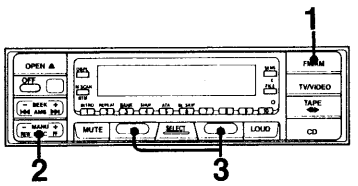
To stop the radio and watch TV or video → TV/VIDEO

To turn off the radio and cut the power supply → OFF

US, Canadian model :

Radio Reception

Tuning in by Adjusting the Frequency
—Manual Tuning



Use the Manual Tuning if you know the frequency of the desired station.

1 **Select the desired band from FM1, FM2 and AM.**
The band changes in the following order:
FM1 ➡ FM2 ➡ AM.

2 **Press the – MANU + button.**

If you keep it pressed, the frequency changes rapidly.

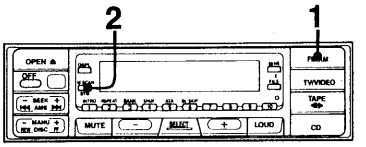
3 **Adjust the volume with ⊖ or ⊕.**

Note
You cannot use the Manual Tuning with the remote commander.

PREVENTING ACCIDENTS!
While you are driving, the use of the Automatic Tuning and the BTM function is recommended in favor of the Manual Tuning.

Radio Reception

Memorizing the Stations Automatically
—BTM (Best Tuning Memory) Function



Best receiving stations are automatically searched and memorized on each band (FM1, FM2 and AM). Up to 10 stations on each band can be stored on the preset buttons 1 to 10 in the order of frequency.

1 **Select the desired band from FM1, FM2 and AM.**
The band changes in the following order:
FM1 ➡ FM2 ➡ AM.

2 **Keep the BTM button pressed for more than 2 seconds.**

Checking in Order, All the Stations Stored in the Memory—Memory Scan Function

Press lightly.

The tuner will receive in order, all the stations stored in the memory for 5 seconds each.

To cancel
Press the M. SCAN button lightly once more. The memory scan will be canceled and you will be able to listen to the station currently being received.

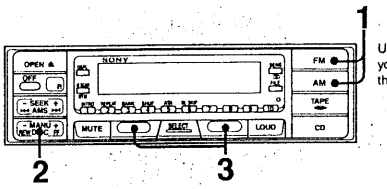
The receivable frequencies of FM1 and FM2 are the same.
Therefore, 20 stations can be memorized on FM.

Note
There may be cases where even the stations which are stored in memory cannot be received due to weak signals in the vicinity of your car.

E Model :

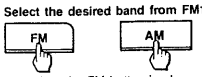
Radio Reception

Tuning in by Adjusting the Frequency
—Manual Tuning



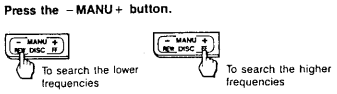
Use the Manual Tuning if you know the frequency of the desired station.

1 **Select the desired band from FM1, FM2 and AM.**



Each time the FM button is plessed, it changes in the following order:
FM1 ➡ FM2.

2 **Press the – MANU + button.**



If you keep it pressed, the frequency changes rapidly.

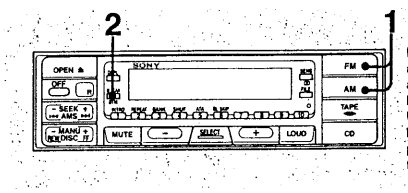
3 **Adjust the volume with ⊖ or ⊕.**

Note
You cannot use the Manual Tuning with the remote commander.

PREVENTING ACCIDENTS!
While you are driving, the use of the Automatic Tuning and the BTM function is recommended in favor of the Manual Tuning.

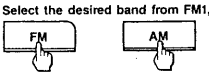
Radio Reception

Memorizing the Stations Automatically
—BTM (Best Tuning Memory) Function



Best receiving stations are automatically searched and memorized on each band (FM1, FM2 and AM). Up to 10 stations on each band can be stored on the preset buttons 1 to 10 in the order of frequency.

1 **Select the desired band from FM1, FM2 and AM.**



Each time the FM button is pressed, it changes in the following order:
FM1 ➡ FM2.

2 **Keep the BTM button pressed for more than 2 seconds.**

Checking in Order, All the Stations Stored in the Memory—Memory Scan Function

Press lightly.

The tuner will receive in order, all the stations stored in the memory for 5 seconds each.

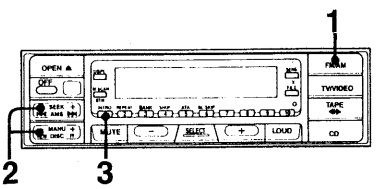
To cancel
Press the M. SCAN button lightly once more. The memory scan will be canceled and you will be able to listen to the station currently being received.

The receivable frequencies of FM1 and FM2 are the same.
Therefore, 20 stations can be memorized on FM.

Note
There may be cases where even the stations which are stored in memory cannot be received due to weak signals in the vicinity of your car.

US, Canadian model :

Memorizing Only Desired Stations

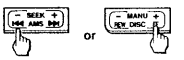


Up to 10 stations on each band (FM1, FM2 and AM) can be stored in the memory in order of your choice (a total of 30 stations).

For example, store a station on the preset button 1.

1 **Select a desired band from FM1, FM2 and AM.**
The band changes in the following order:
FM1 ➡ FM2 ➡ AM.

2 **Tune in the station which you wish to store in the memory. (page 21 or 24.)**



3 **Keep the preset button pressed for about 2 seconds until the "MEM" indication comes on the display window.**

The number of the preset button of which you are pressing now comes on the display window. When the "MEM" indication comes on, the station is stored in the memory and the operation is now complete. The "MEM" indication goes off after a while.

Repeat the same procedure to store other stations.

Only one station per band (FM1, FM2 and AM) can be stored in the memory on each preset button
If you try to store another station on the same preset button, the previously stored station will be erased.

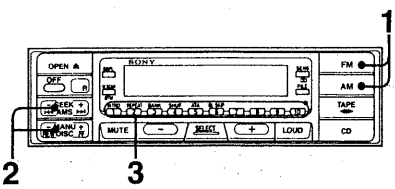
The BTM function — how this function operates

It starts searching stations from the lowest frequency of the currently tuned in band. When a station is located, it will be stored in the memory on the preset button whose number is indicated on the display window. If there is no preset number indicated, it will be stored in the memory on the preset button number 1 onward. It continues to store the stations in the memory until all the preset buttons are occupied.
For example, if the FM1 band was selected, it will continue until the preset button 10 on the FM2 band is occupied.
When all the memory preset buttons are occupied with the memories before the highest receivable frequency is searched, the unit will start searching for higher frequencies from where it was left off. This is to check if there are any more stations with better reception than the ones already stored in the memory.
If a station with better reception is found, the unit will store it in the memory in place of a station with an inferior reception.
Lastly, it rearranges all the stations in the order of frequency from the lowest and stores them in the memory. The whole operation is now completed; the stations with better reception are stored in the memory on the preset buttons in the order of frequency.

Notes
- There may be a situation where there are not enough receivable stations due to the lack of stations in the vicinity or weak broadcasting signals. In such cases the BTM operation may stop without all the buttons being stored with a memory.
- If you start the BTM operation from the FM1 band, it will continue to store stations in memory to the FM2 band. Care must be taken if you wish to keep the stored stations on the FM 2 band.
- If you start the BTM operation from the FM 2 band, it will stop when all the memories on the FM 2 band are occupied. It will not continue to the FM 1 band.

E model :

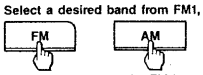
Memorizing Only Desired Stations



Up to 10 stations on each band (FM1, FM2 and AM) can be stored in the memory in order of your choice (a total of 30 stations).

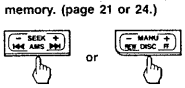
For example, store a station on the preset button 1.

1 **Select a desired band from FM1, FM2 and AM.**

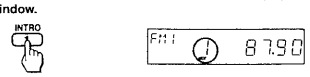


Each time you press the FM button, it changes in the following order:
FM1 ➡ FM2.

2 **Tune in the station which you wish to store in the memory. (page 21 or 24.)**



3 **Keep the preset button pressed for about 2 seconds until the "MEM" indication comes on the display window.**



The number of the preset button of which you are pressing now comes on the display window. When the "MEM" indication comes on, the station is stored in the memory and the operation is now complete. The "MEM" indication goes off after a while.

Repeat the same procedure to store other stations.

Only one station per band (FM1, FM2 and AM) can be stored in the memory on each preset button
If you try to store another station on the same preset button, the previously stored station will be erased.

The BTM function — how this function operates?

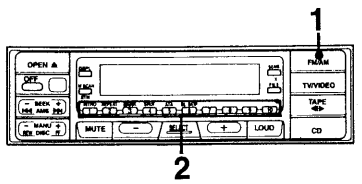
It starts searching stations from the lowest frequency of the currently tuned in band. When a station is located, it will be stored in the memory on the preset button whose number is indicated on the display window. If there is no preset number indicated, it will be stored in the memory on the preset button number 1 onward. It continues to store the stations in the memory until all the preset buttons are occupied.
For example, if the FM1 band was selected, it will continue until the preset button 10 on the FM2 band is occupied.
When all the memory preset buttons are occupied with the memories before the highest receivable frequency is searched, the unit will start searching for higher frequencies from where it was left off. This is to check if there are any more stations with better reception than the ones already stored in the memory.
If a station with better reception is found, the unit will store it in the memory in place of a station with an inferior reception.
Lastly, it rearranges all the stations in the order of frequency from the lowest and stores them in the memory. The whole operation is now completed; the stations with better reception are stored in the memory on the preset buttons in the order of frequency.

Notes
- There may be a situation where there are not enough receivable stations due to the lack of stations in the vicinity or weak broadcasting signals. In such cases the BTM operation may stop without all the buttons being stored with a memory.
- If you start the BTM operation from the FM1 band, it will continue to store stations in memory to the FM2 band. Care must be taken if you wish to keep the stored stations on the FM 2 band.
- If you start the BTM operation from the FM 2 band, it will stop when all the memories on the FM 2 band are occupied. It will not continue to the FM 1 band.

US, Canadian model :

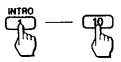
Radio Reception

Receiving Stations Stored in the Memory



1 **Select the desired band from FM1, FM2 and AM.**
The band changes in the following order:
FM1 ➡FM2 ➡ AM.

2 **Press the preset button lightly on which the desired station is stored.**



Note
There may be cases where even the stations which are stored in the memory can not be received due to weak signals in the vicinity of your car.

Receiving in Order the Stations Stored in the Memory—Preset Search Function
(Remote commander only)

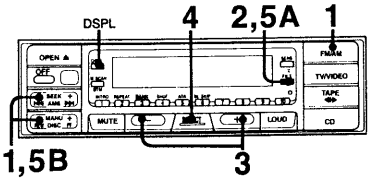
The number will advance in the following order:
1 ➡ 2 ➡ 3 ➡ ... ➡ 8 ➡ 9 ➡ 10 ➡ 1 ➡ ...
(number of the preset buttons)

The number will reverse in the following order:
1 ➡ 10 ➡ 9 ➡ ... ➡ 4 ➡ 3 ➡ 2 ➡ 1 ➡ ...

If you keep the button pressed, it will go faster.

Radio Custom File Function

Displaying the Name of Each Station
—Station Memo Function

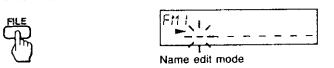


You can store the names of radio stations in the memory of tuner. The name of station can be displayed on the display window while it is tuned in.
You can store the names of TV stations in the same way. The steps described below can be applied to the TV operation as well.

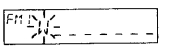
Storing the Station Names to the Memory of the Tuner

1 **Tune in a station whose name you wish to register.**

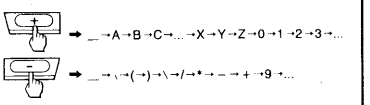
2 **Press the FILE button for more than two seconds to enter the name edit mode.**



3 **Press either ⊖ or ⊕ to select the desired letters and numbers.**



Each time you press ⊖ or ⊕, characters will come on in the following order:



4 **Press the SELECT button after locating the desired letter or number.**

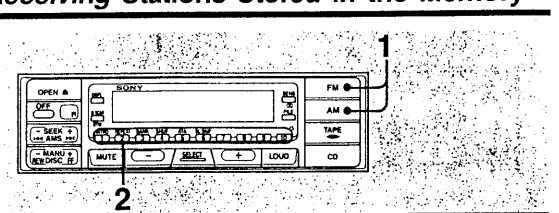
The blinking part will move to the next space on the right. Repeat steps 3 and 4 to enter the entire name. Up to 8 letters can be used per name.

Notes
- If you press the SELECT button when the eighth letter (farthest right letter) is blinking, the blinking part goes back to the first letter (farthest left letter).
- If you wish to put a blank space after a letter, select the "_" (under-bar).

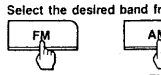
E model :

Radio Reception

Receiving Stations Stored in the Memory

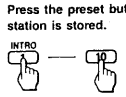


1 **Select the desired band from FM1, FM2 and AM.**



Each time you press the FM button, it changes in the following order:
FM1 ➡ FM2.

2 **Press the preset button lightly on which the desired station is stored.**



Note
There may be cases where even the stations which are stored in the memory cannot be received due to weak signals in the vicinity of your car.

Receiving in Order the Stations Stored in the Memory—Preset Search Function
(Remote commander only)

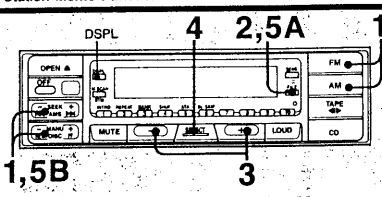
The number will advance in the following order:
1 ➡ 2 ➡ 3 ➡ ... ➡ 8 ➡ 9 ➡ 10 ➡ 1 ➡ ...
(number of the preset buttons)

The number will reverse in the following order:
1 ➡ 10 ➡ 9 ➡ ... ➡ 4 ➡ 3 ➡ 2 ➡ 1 ➡ ...

If you keep the button pressed, it will go faster.

Radio Custom File Function

Displaying the Name of Each Station
— Station Memo Function

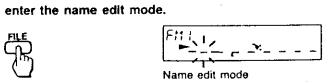


You can store the names of radio stations in the memory of tuner. The name of station can be displayed on the display window while it is tuned in.

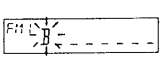
Storing the Station Names to the Memory of the Tuner

1 **Tune in a station whose name you wish to register.**

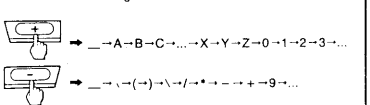
2 **Press the FILE button for more than two seconds to enter the name edit mode.**



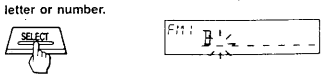
3 **Press either ⊖ or ⊕ to select the desired letters and numbers.**



Each time you press ⊖ or ⊕, characters will come on in the following order:



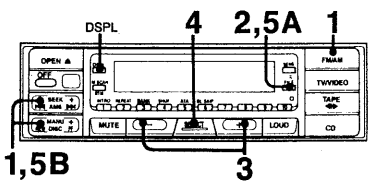
4 **Press the SELECT button after locating the desired letter or number.**



The blinking part will move to the next space on the right. Repeat steps 3 and 4 to enter the entire name. Up to 8 letters can be used per name.

Notes
- If you press the SELECT button when the eighth letter (farthest right letter) is blinking, the blinking part goes back to the first letter (farthest left letter).
- If you wish to put a blank space after a letter, select the "_" (under-bar).

US, Canadian model :



5 **To register the name, use one of the following two methods.**

A Press the FILE button for more than two seconds

FILE

The unit will go back to the normal mode.

B Tune in another station by pressing the SEEK or MANU button and repeat the procedure.

You can also change the band and repeat the process.

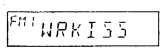
Notes

- If you turn off the tuner before you complete this procedure, the name you have just entered will not be registered.
- You can store up to 40 names, but if you try to enter more, the "FULL" indication will come on the display window and you will not be able to register them. You can register more names after erasing some of the existing names.

Displaying the Stations Names

While listening to the radio, press the DSPL button to enter the name display mode.

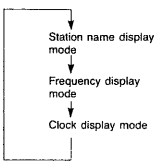
DSPL



If the name of the station is not registered, "--------" will come on the display window.

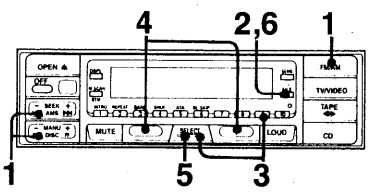
Each time you press the DSPL button while listening to the radio

The display mode changes cyclically as follows:



Radio Custom File Function

Editing the Registered Station Names



The steps described below can be applied to the TV operation as well.

Erasing the Station Names

1 **Turn the radio on and tune in any station.**

2 **Press the FILE button for more than two seconds to enter the name edit mode.**

FILE

The currently received station will come on the display window.

3 **Press the number 9 button while pressing the SELECT button.**

SELECT 9

The station names stored in the memory of the tuner will come on the display window in the same order as they were registered.*

4 **Press the ⊖ or ⊕ button to search for the names you wish to erase.**

⊖ or ⊕

5 **Press the SELECT button for more than two seconds to erase the displayed name.**

SELECT

Repeat the steps 4 and 5 to erase the other station names.

6 **Press the FILE button for more than two seconds.**

FILE

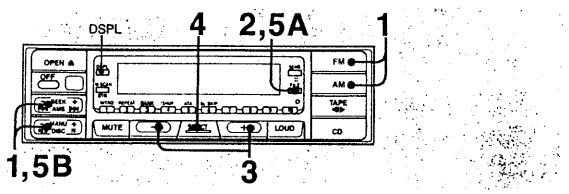
The unit will go back to the normal mode.

The alternative method to erase the name

In the step 3 of "Changing the Station Names" (page 32), put the eight under-bars ("_"), then press the FILE button for more than two seconds. The displayed station name will be erased.

* If you have erased some of the title before, they will not come on in the same order as they were registered.

E model :



5 **To register the name, use one of the following two methods.**

A Press the FILE button for more than two seconds

FILE

The unit will go back to the normal mode.

B Tune in another station by pressing the SEEK or MANU button and repeat the procedure.

You can also change the band and repeat the process.

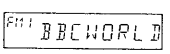
Notes

- If you turn off the tuner before you complete this procedure, the name you have just entered will not be registered.
- You can store up to 40 names, but if you try to enter more, the "FULL" indication will come on the display window and you will not be able to register them. You can register more names after erasing some of the existing names.

Displaying the Stations Names

While listening to the radio, press the DSPL button to enter the name display mode.

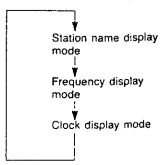
DSPL



If the name of the station is not registered, "--------" will come on the display window.

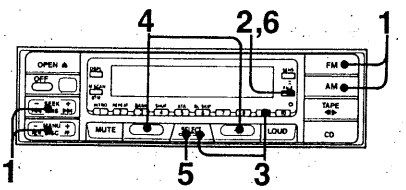
Each time you press the DSPL button while listening to the radio

The display mode changes cyclically as follows:



Radio Custom File Function

Editing the Registered Station Names



Erasing the Station Names

1 **Tune in a station whose name you wish to erase.**

2 **Press the FILE button for more than two seconds to enter the name edit mode.**

FILE

The currently received station will come on the display window.

3 **Press the number 9 button while pressing the SELECT button.**

SELECT 9

The station names stored in the memory of the tuner will come on the display window*.

4 **Press ⊖ or ⊕ to search for the names you wish to erase.**

⊖ or ⊕

5 **Press the SELECT button to erase the displayed name.**

SELECT

Repeat the steps 4 and 5 to erase the other station names.

6 **Press the FILE button for more than two seconds.**

FILE

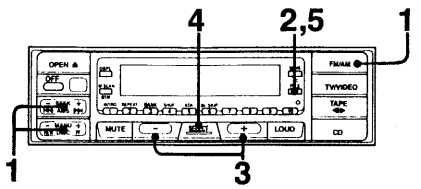
The unit will go back to the normal mode

The alternative method to erase the name

In the step 3 of "Changing the Station Names" (page 32), put the eight under-bars ("_"), then press the FILE button for more than two seconds. The displayed station name will be erased.

* If you have erased some of the title before, they will not come on in the same order as they were registered.

US, Canadian model :



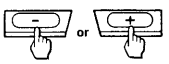
Changing the Station Names

1 **Tune in the station whose name you wish to change.**

2 **Press the FILE button for more than two seconds to enter the name edit mode.**

The currently received station will come on the display window.

3 **Select letters by the ⊖ or ⊕ button.**



4 **Press the SELECT button.**

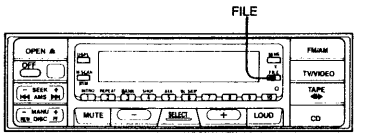
Tune in other stations using the SEEK or MANU button and repeat steps 3 and 4, if necessary.

5 **Press the FILE button for more than two seconds.**
The new station names are registered.

Radio Custom File Function

Displaying Contents of the Preset Memory on TV Monitor

—When the Optional Hide-away TV Tuner is Connected to TV Monitor

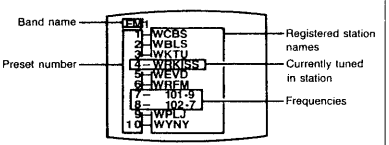


The contents of the preset memory stored on the currently received band will be listed on the TV monitor.

During radio reception

Press lightly.

Example: When receiving the FM1 band.



- If the name of station is registered, that name will be displayed. If the name of station is not registered, the frequency of that station will be displayed.
- The name of station currently tuned in will be displayed in magenta.

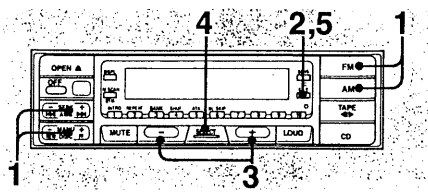
To turn off the display

Press the FILE button again.

Notes

- It may take some time before all the displays come on the screen.
- The contents of the preset memory cannot be listed when the unit is in the simultaneous play mode.

E model :



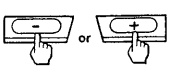
Changing the Station Names

1 **Tune in the station whose name you wish to change.**

2 **Press the FILE button for more than two seconds to enter the name edit mode.**

The currently received station will come on the dispaly window.

3 **Select letters by ⊖ or ⊕.**



4 **Press the SELECT button.**

Tune in other stations using the SEEK or MANU button and repeat steps 3 and 4, if necessary.

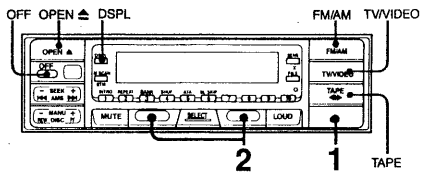
5 **Press the FILE button for more than two seconds.**
The new station names are registered.

US, Canadian model :

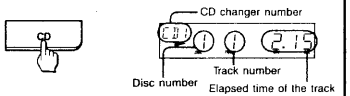
CD Changer Operation

Listening to the CD Play

— When Optional Sony CD Changers are Connected



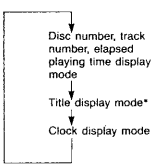
1 **Press the CD button to start CD play.**



2 **Adjust the volume with ⊖ or ⊕.**

If it is set in the normal playing mode, after the end of a disc, the disc with the next number shown will be automatically played. If two or more CD changers are connected, after the end of the last disc, the first disc in the CD changer with the next number shown will be played. The order of the CD play can be rearranged by changing the playing modes. For details, see "Playing in Other Modes." (page 37)

Getting the clock display while listening to a CD
Press the DSPL button. Each time you press the DSPL button, the display mode will change cyclically as follows:



* See pages 40 and 43 for the details about the title display mode.

Other Operations

To stop CD play and listen to a tape

If a cassette is already loaded →

If a cassette is not loaded →

To stop CD play and listen to the radio →

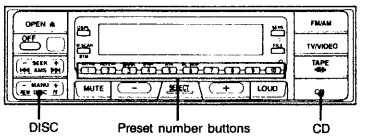
To stop CD play and turn on the TV or video →

To stop CD play and turn the unit off →

Common :

CD Changer Operation

Locating a Desired Disc, Track, or Part of a Track



The useful functions of this unit enables you to quickly search a disc, track, or parts of track which you wish to listen to.

Locating a Disc of Your Choice Sequentially

Press the DISC button lightly during CD play.

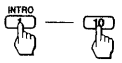
To search previous disc numbers →

To search the disc numbers ahead →

You can search a disc by displaying the names of discs registered with the Custom File Function. For details, see page 40.

Locating a Disc Directly

Press the corresponding disc number button for more than two seconds during CD play.



Listening to the Discs in Another CD Changer *(When two or more changers are connected)*

Press the CD button during CD play.

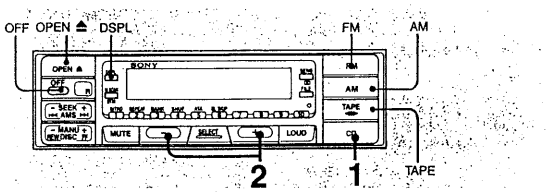
The CD changer number changes.

E model :

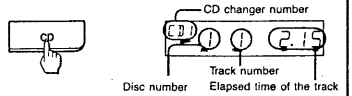
CD Changer Operation

Listening to the CD Play

— When Optional Sony CD Changers are Connected



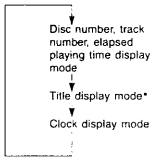
1 **Press the CD button to start CD play.**



2 **Adjust the volume with ⊖ or ⊕.**

If it is set in the normal playing mode, after the end of a disc, the disc with the next number shown will be automatically played. If two or more CD changers are connected, after the end of the last disc, the first disc in the CD changer with the next number shown will be played. The order of the CD play can be rearranged by changing the playing modes. For details, see "Playing in Other Modes." (page 37)

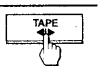
Getting the clock display while listening to a CD
Press the DSPL button. Each time you press the DSPL button, the display mode will change cyclically as follows:

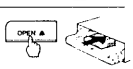


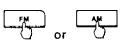
* See pages 40 and 43 for the details about the title display mode.

Other Operations

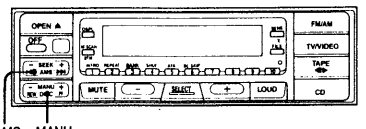
To stop CD play and listen to a tape

If a cassette is already loaded → 

If a cassette is not loaded → 

To stop CD play and listen to the radio → 

To stop CD play and turn the unit off →



Locating the Beginning of a Track
—AMS Function

Press the AMS button during CD play.

To listen to the current track again from the beginning →

To search for previous tracks → (Keep on pressing)

To listen to the next track from the beginning →

To search for the beginning of the track ahead → (Keep on pressing)

Note
When you keep on pressing the AMS button and come to either the beginning or end of a disc, you will not be able to go any further.

Searching for a Desired Part of Track
—Manual Search

Keep on pressing the MANU button during CD play.

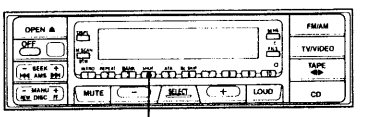
To go ahead → (Keep on pressing)

To go back → (Keep on pressing)

The elapsed playing time of the track comes on to the display window during the manual search.

Note
You cannot use the Manual Search on the remote commander.

Playing in Other Modes



Playing Discs Randomly—Shuffle Play Function

Playing the tracks on a disc randomly —Inter disc shuffle play

Press SHUF to get the "SHUF 1" indication.

When all the tracks on a disc have been played, it goes on to the next disc.

Playing the tracks on all discs in the currently selected CD changer randomly—Inter changer shuffle play

Press SHUF to get the "SHUF 2" indication.

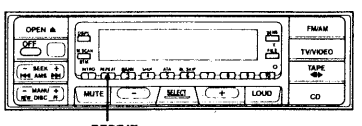
Playing the tracks on all discs in all CD changers connected randomly—All shuffle play (When two or more CD changers are connected)

Press SHUF to get the "SHUF 3" indication.

The function of the SHUF button changes cyclically as follows:

SHUF1 (Inter-disc) → SHUF2 (Inter-changer) → SHUF3* (All-shuffle) → cancel (Normal CD play)

* All-shuffle play (SHUF3) mode functions only when two or more changers are connected to the unit. When only one changer is connected, the "SHUF3" indication will not come on. In this case, if you press the button once again when the SHUF2 indication comes on, the shuffle play will be canceled.



Playing a Disc Repeatedly
—Repeat Play Function

Playing the current track repeatedly—Track repeat

Press REPEAT to get the "REP1" indication.

When the current track is finished, it will go back to the beginning and will start playing the same track again.

Playing the current disc repeatedly—Disc repeat

Press REPEAT to get the "REP2" indication.

When the last track of the current disc is finished, it will go back to the beginning of the first track of the same disc and will start playing again.

Playing the discs in the currently selected CD changer repeatedly—CD changer repeat (When two or more CD changers are connected)

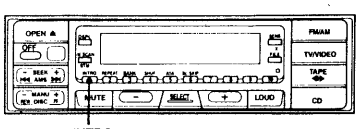
Press REPEAT to get the "REP3" indication.

When the last disc of a currently selected CD changer is finished, instead of moving to another changer, it goes back to the first disc in the same changer and starts playing again.

The function of the REPEAT button changes cyclically as follows:

REP1 (Track) → REP2 (Disc) → REP3* (Changer) → cancel (Normal CD play)

* CD changer repeat (REP3) mode functions only when two or more changers are connected to the unit. When only one changer is connected, the "REP3" indication will not come on. In this case, if you press the button once again when the REP2 indication comes on, the repeat play will be canceled.



Searching for a Desired Track by Listening to the First 10 Seconds of Each Track
—Intro Scan Function

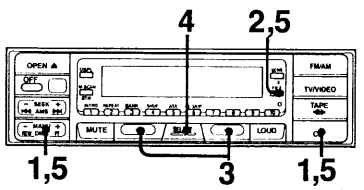
Press INTRO while listening to a CD.

The unit will play in order the first 10 seconds of each track on a disc.
When the first 10 seconds of the last track on a disc is played, it will move on the next disc.
When the first 10 seconds of the last track on the last disc in a CD changer is played, it will move on to the next CD changer (only when two or more CD changers are connected).

When you find the desired track
Press the INTRO button once more. The intro scan function will be canceled and you can continue to listen to the track.

CD Custom File Function

Displaying the Title of Each Disc—Disc Memo Function



You can put a title of your own choice to a CD (one title per CD). The title can be displayed on the display window while the CD is being loaded and played.

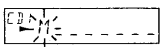
Putting Your Personalized Titles onto the Discs

1 **Play the disc that you wish to title.**

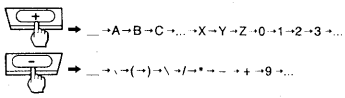
2 **Press the FILE button for more than two seconds to enter the name edit mode.**

Name edit mode

3 **Press either ⊖ or ⊕ to select the desired letter and number.**



Each time you press ⊖ or ⊕, characters will come on in the following order:



4 **Press the SELECT button after locating the desired letter or number.**

The blinking part will move to the next space on the right. Repeat steps 3 and 4 to enter the entire titles. Up to 8 characters can be used per disc.

Notes
- If you press the SELECT button when the eighth letter (farthest right letter) is blinking, the blinking part goes back to the first letter (farthest left letter).
- If you wish to put a blank space after a character, select the " ".

5 **Register the title. Use one of the following methods 1) through 4).**

1) **Press the FILE button for more than two seconds.**

The unit will go back to the normal CD playing mode.

2) **Press the FILE button lightly.**

(Press lightly)

The unit enters the BANK mode in which the play and skip modes can be set. (Continue to step 4 in "Setting of the Play and Skip Modes on the Discs" of page 44)

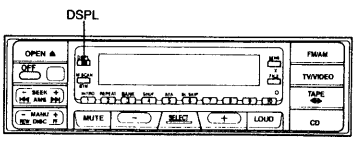
3) **Press the DISC button.**

(Press lightly)

You can change the disc and continue to put the titles to the discs.

4) **Press the CD button. (Only when two or more CD changers are connected.)**

You can go to the next CD changer and the unit will go back to the normal playing mode.



Displaying the Title

While the CD is playing, press the DSPL button to enter the title display mode.

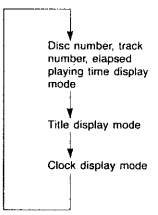
If the title of a disc is not registered, "--------" will come on the display window.

While loading the discs
Whatever the display mode is, the indication automatically changes as follows:

Title of the disc (2 seconds) ► Disc and track number (2 seconds) ► Display mode currently selected

The registered titles of the discs may not come on the display immediately during loading. This occurs because the unit displays the titles after identifying the disc by reading the TOC* (Table of Contents) information on the disc. Therefore, while the CD changer is loading the disc for the first time, it may take some time for the registered title of the disc to be displayed. Once the disc has been loaded and played, the TOC information would have been read and the title will be displayed even while the disc is being loaded.

Each time you press the DSPL button while the CD is playing
The indication on the display window will change cyclically as follows:



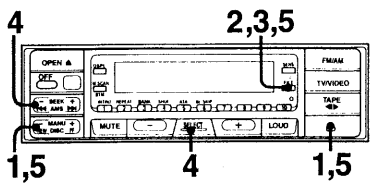
* The TOC information of the disc contains the total length of playing time, and the codes to search for the beginning and end of each track, and so on.

Where are the contents of the custom file stored?
The information registered in the custom file will be stored in the memory of the CD changer currently selected. Therefore, if you play a custom-filed CD in a CD changer which is not connected with a UNILINK cable to each other such as in another car, you will not be able to have its title displayed. The Bank function will not be activated either.
However, you will be able to have the CD titles displayed even if they are not loaded in their original CD changers provided that the CD changers are connected to each other by a UNILINK cable. The Bank function will be activated as well.

You can register the maximum of 110 discs on one CD changer
If you try to register more than 110 discs, the unit will display "FULL" on the display window and will not accept the command for custom-filing. In this case, you will have to erase the memory of the other discs before you enter the new ones. See page 48 for details on erasing the memory.

CD Custom File Function

Playing Only Desired Tracks on a Disc



Each track can be set to be either played or skipped while the CD is playing, so that only desired tracks on the CD can be played.

Setting the Play and Skip Modes on the Discs

1 **Play the disc to which you wish to set these modes.**

2 **Press the FILE button for more than two seconds and put the titles onto the discs.**

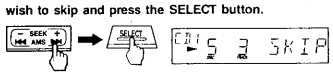
See page 40 for details about putting a title. If the title has already been registered, go to step 3.

3 **Press the FILE button lightly to enter the PLAY/SKIP edit mode.**

When the unit enters the PLAY/SKIP edit mode, the indication on the display window will look like the illustration below.

PLAY/SKIP edit mode

4 **Press the AMS button to select the track number you wish to skip and press the SELECT button.**



The indication changes from "PLAY" to "SKIP". If you wish to return to "PLAY", press the SELECT button again.

Repeat the operation in this step to enter either the "PLAY" or "SKIP" mode on all the tracks.

Notes
- When the title is not registered, you cannot enter the PLAY/SKIP edit mode even if you press the FILE button.
- You can only set the "SKIP" setting onto up to 24 tracks. If a disc has more than 24 tracks, you will not be able to set the SKIP setting on the tracks after the 24th track.
- You cannot set the SKIP setting onto all of the tracks on a disc.

5 **To register the settings, use one of the following methods (1) through (4).**

(1) **Press the FILE button for more than two seconds.**

The unit will go back to the normal CD playing mode.

(2) **Press the FILE button lightly.**

(Press lightly)

The unit re-enters the name edit mode. See page 40.

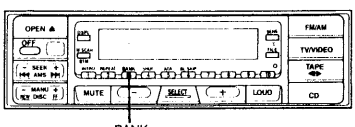
(3) **Press the DISC button.**

(Press lightly)

You can change the disc and continue to put the titles to the discs.

(4) **Press the CD button. (Only when two or more CD changers are connected.)**

You can go to the next CD changer and the unit will go back to the normal playing mode.



Playing with the Bank Function

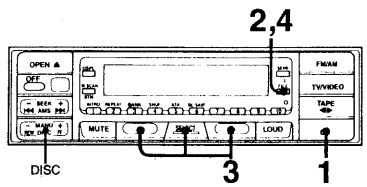
Press the BANK button to get the "BANK" indication.

The discs will be played according to the settings in the PLAY/SKIP edit mode.
To cancel, press the BANK button again.

Note
If the "BANK" indication is not appearing on the display window, even the tracks with PLAY or SKIP settings will not be played according to the settings. The unit will play all the tracks.

CD Custom File Function

Editing a Custom File



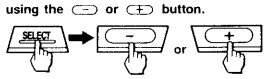
When you change the title, the PLAY/SKIP setting of the Bank function will not be erased at the same time.

Changing the Title and the Bank Settings

1 **Play the disc you wish to edit.**

2 **Press the FILE button for more than two seconds to enter the name edit mode.**

3 **Press the SELECT button to make the part you wish to edit flashing. Select the letters and numbers using the (−) or (+) button.**

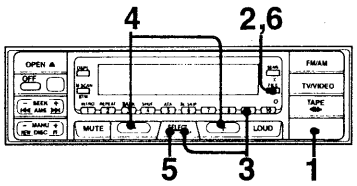


If you wish to change the titles of other discs, repeat steps 1 through 3 on the discs after changing them with the DISC or CD button.

4 **Press the FILE button for more than two seconds.**

Now the new title is registered.

Note
If you wish to change the PLAY/SKIP settings of the Bank function, press the FILE button lightly to enter the PLAY/SKIP mode while the unit is in the name edit mode in the step 2. While checking the disc and track numbers on the display window, change the settings by the AMS and SELECT buttons. Press the FILE button lightly again and the unit will enter the name edit mode again.



If you erase the title, the PLAY/SKIP mode of the Bank settings will be erased as well.

Erasing a Title

1 **Select the CD changer and play any disc.**

2 **Press the FILE button for more than two seconds to enter the name edit mode.**

FILE

The name of the currently played CD will appear on the display window.

3 **Press the number 9 button while pressing the SELECT button.**

SELECT + 9

The titles stored in the CD changer currently selected will appear on the display window in the same order as they were registered.*.

4 **Press the ⊖ or ⊕ button to search for the title you wish to erase.**

⊖ or ⊕

5 **Press the SELECT button after the title you wish to erase is displayed.**

SELECT

Repeat steps 4 and 5 on other titles, if necessary.

6 **Press the FILE button for more than two seconds.**

FILE

Now the title and the Bank settings are erased. The unit goes back to the normal CD playing mode.

The alternative method to erase a title

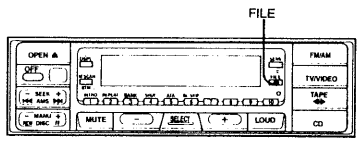
You can erase a title by selecting eight "_"s (underbars) as described in step 3 of "Changing the Title and the Bank Settings" (page 47)

* If you have erased some of the titles before, they will not come on in the same order as they were registered.

US, Canadian model :

CD Custom File Function

Displaying the Stored CD's Information Inside CD Changer on TV Monitor —*When the Optional Hide-away TV Tuner is Connected to TV Monitor*



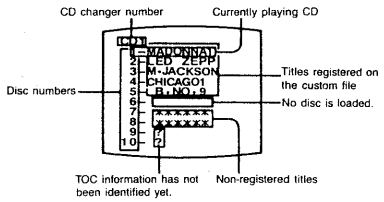
The names of CDs inside and other information stored in the currently selected CD changer will be listed on the TV monitor.

During CD play

FILE

Press lightly.

Example: When the CD changer 1 is selected.



* If a title is registered on the custom file, that name will be displayed. If not, " ****** " will be displayed in its place.
* A blank space will be displayed if there is a disc number representing an empty slot in the disc magazine.
* "?" will be displayed if the TOC infromation of the disc has not been collated with the custom file.

To turn off the display

FILE

Press the FILE button again.

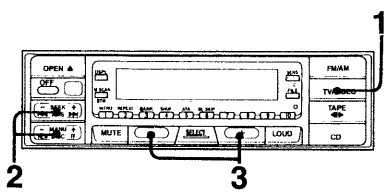
Notes

* It may take some time before all the displays come on the screen.
* The information cannot be listed when the unit is in the simultaneous play mode. See page 57.

US, Canadian model :

Watching TV and Video

Watching TV —*When the Optional Hide-away TV Tuner is Connected*



1 **Press the TV/VIDEO button to select TV.**

TV/VIDEO

2 **Press either the SEEK or MANU button to receive a desired TV station.**

To automatically search and receive a TV station (Automatic Tuning) ➡ Press the SEEK button.

SEEK + AMS

Higher frequency channels

Lower frequency channels

To receive a station by changing channels one at a time

MANU + REW DISC FF

Higher frequency channels

Lower frequency channels

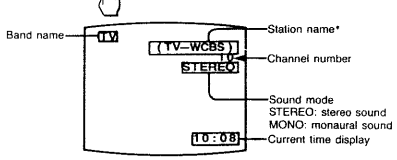
3 **Adjust the volume with ⊖ or ⊕.**

The TV/VIDEO button changes its mode cyclically as follows:

TV → VIDEO 1

To superimpose the channel indication etc. on the TV monitor – Superimpose display (Remote commander only)

Press the DSPL button on the remote commander. Press again to turn it off. DSPL



* It is necessary to register the names of TV stations in advance in order to get them displayed on the TV monitor. (See page 53.)

To get the current time or TV station names displayed on the display window of main unit (the unit only)

Press the DSPL button on the main unit. The display on the display window will change cyclically as follows:

DSPL

Channel number display mode → TV station display mode* → Clock display mode

* It is necessary to register the names of TV stations in advance in order to get them displayed on the TV monitor. (See page 53.)

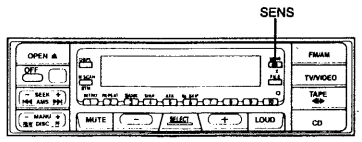
Note

You cannot get the displays on the TV monitor by pressing the DSPL button on the main unit.

Note

You cannot change the display on the unit by the DSPL button on the remote commander while watching TV or video.

US, Canadian model :



If the reception of stereo broadcasting is not very good and there is too much interference noise

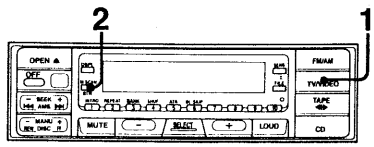
Press the SENS/ ▯▯ button to change the mode to monaural.

The "MONO" indication will come on the TV monitor and the noise will be reduced.

Watching TV and Video

Memorizing TV Stations Automatically

—Auto-Memory



The unit will automatically search the receivable TV stations and store them on the memory preset button 1 through 10.

1 **Press the TV/VIDEO button to turn on the TV.**

2 **Press the BTM button for more than two seconds.**

The unit will start memorizing the stations from the memory preset button 1 onwards. If a preset number has been displayed before the BTM button is pressed, the unit will start memorizing the stations from that number onwards.

Notes
- If the Auto-Memory tuning of TV is in operation, the BTM (Best Tuning Memory) function will not work as in radio reception. However all the receivable stations will be stored in memory.
- If there are not enough stations or the broadcasting signals are too weak, the Auto-Memory function may be terminated before all the memory preset buttons are occupied.

Checking In Order All the Memorized TV Stations—Memory Scan

Press the M.SCAN button lightly.

The memorized stations will be received in order for five seconds each.

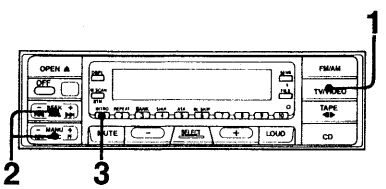
If you wish to continue to watch a station received during the Memory Scan, press the BTM/M.SCAN button lightly when the desired station is received. The Memory Scan function will be canceled and you will be able to continue to watch the received station.

Note
The unit will not receive a station if its broadcasting signal is too weak even if that station is stored in memory.

US, Canadian model :

Watching TV and Video

Momorizing Only the Desired TV Stations

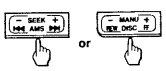


Up to 10 stations each can be memorized on TV in the order of your preference.

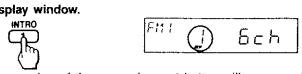
Example: To memorize a station on the preset button 1.

1 **Press the TV/VIDEO button to select TV.**

2 **Tune in the desired TV station. (See page 50.)**



3 **Keep the preset button pressed for approximately two seconds until the "MEM" indication comes on the display window.**

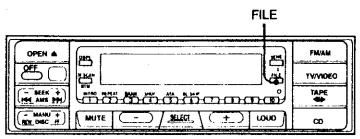


The number of the pressed preset button will come on the display window. When the "MEM" indication comes on, the operation is completed. The indication will go off in a short while.

Watching TV and Video

Displaying Contents of the Preset Memory on TV Monitor

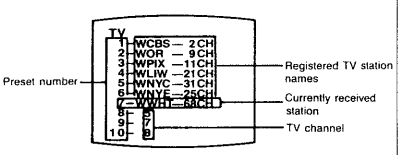
— Station Memo Function



Displaying the listed contents of preset memory buttons on the monitor.

During a TV reception

Press lightly.



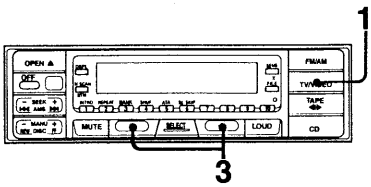
- If the name of station is registered, that name will be displayed and if it is not registered, the channel number of the station will be displayed. See page 29 for memorizing the station names.
- The currently received station will be displayed in magenta.
- The monitor screen will automatically return to the TV display after a few seconds.

Notes
- You cannot get the TV display while the list is displayed.
- The contents of the memory cannot be listed when the unit is in the simultaneous play mode.

US, Canadian model :

Watching TV and Video

Watching Video



You can control a video deck or 8 mm video camera connected to the hide-away unit or TV tuner through this unit.

1 Press the TV/VIDEO button to get "VIDEO 1" indication displayed.

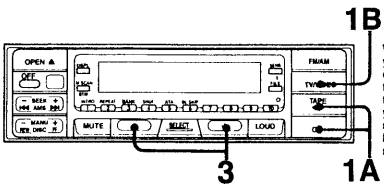
2 Play back the video.

3 Adjust the volume with (−) or (+).

Using a remote controller supplied to a video deck
This unit can receive signals from the remote controller supplied to a SONY video deck and relay them to the video deck. You can control the video deck by using the remote controller supplied to the video deck through this unit. See the operating instructions of video deck and hide-away unit for the details.

Watching TV and Video

Watching TV or Video While Listening to CDs and Cassettes — Simultaneous Play Function



While watching TV or video, you can listen to CDs and cassettes (Simultaneous Play function). When the unit is in the simultaneous play mode, you can still listen to the sound of TV or video through headphones plugged in to the monitor.

1 There are two ways where simultaneous playback can be made.

A During TV reception or video playback:

Press CD or TAPE for more than two seconds.

The sound from TV or video will be turned off and the sound from CD or tape playback can be heard instead. However you can continue to watch the picture on the monitor screen.

B During CD or tape playback:

Press TV/VIDEO for more than two seconds.

The TV picture will come on the monitor and you can continue to listen to the sound of CD or tape.

2 Select a desired track or TV picture.

To select a desired track
Use the buttons on the unit and not on the remote commander. The buttons will function in the normal way as in CD or tape playback.

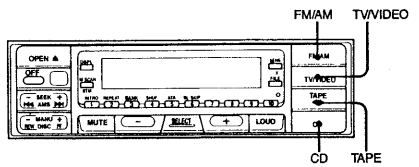
To select a desired TV picture
Use the buttons on the remote commander and the TV/VIDEO button on the unit.

3 Adjust the volume with (−) or (+) on the main unit.

Notes
- The simultaneous play function will not work while listening to the radio.
- The ATA function will not work during simultanerous tape playback.
- The contents of the preset memories or CD information cannot be listed when the unit is in the simultaneous play mode.
- If you wish to listen to tape playback, make sure that the tape deck is loaded with a cassette. If the deck is not loaded, the simultaneous play function does not work.

Note
When selecting a desired track, be sure to use the buttons on the unit and not on the remote commander.
When the unit is in the simultaneous play mode, CD and tape playback cannot be controlled by the remote commander.

US, Canadian model :



To listen to the sound of TV or video while the unit is in the simultaneous play mode

You can listen to the sound of TV or video even when the unit is in the simultaneous play mode through headphones plugged in to the monitor.

Getting Back to the Normal Mode by Canceling Simultaneous Play Mode

	Bottons on the unit	Buttons on the remote commander
To listen to a tape	TAPE — Press for more than two seconds.	TAPE
To listen to a CD	CD — Press for more than two seconds.	CD
To watch TV or video	TV/VIDEO	TV/VIDEO — Press for more than two seconds.
To listen to the radio	FM/AM	FM/AM

The simultaneous play mode will be canceled and the unit will go back to the TV reception or video playback mode in the following cases:
- If the OPEN/⏏ button is pressed when the unit is in the simultaneous play mode with tape.
- If the EJECT button on a CD changer is pressed when the unit is in the simultaneous play mode with CD.

Common :

Maintenance

Fuse Replacement

If the fuse blows, check the power connection and replace the fuse. If the fuse blows again after replacement, there may be an internal malfunction. In this case, consult your nearest Sony dealer.

Warning
Use the specified ampere fuse.
Use of a higher amperage fuse may cause serious damage.

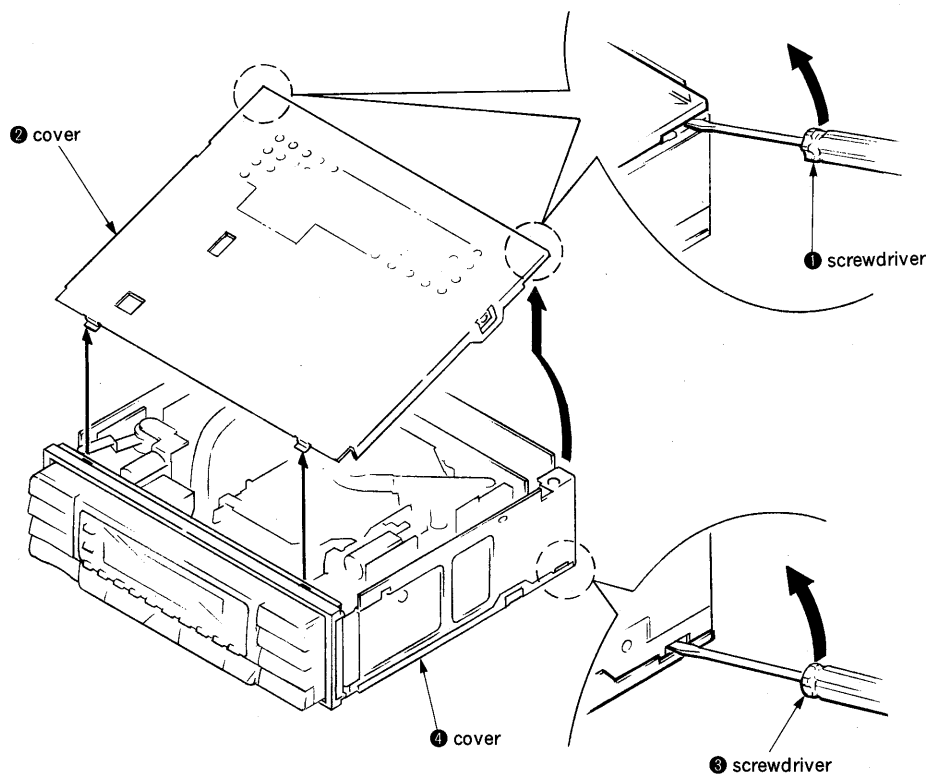
Cleaning the Head and the Tape Path

Prolonged use may contaminate the tape head and the tape path. Contamination causes sound drop-outs in playback.
Clean the tape head and the tape path every two weeks to enjoy optimum hi-fi stereo sound. Use a commercially available cleaning cassette.

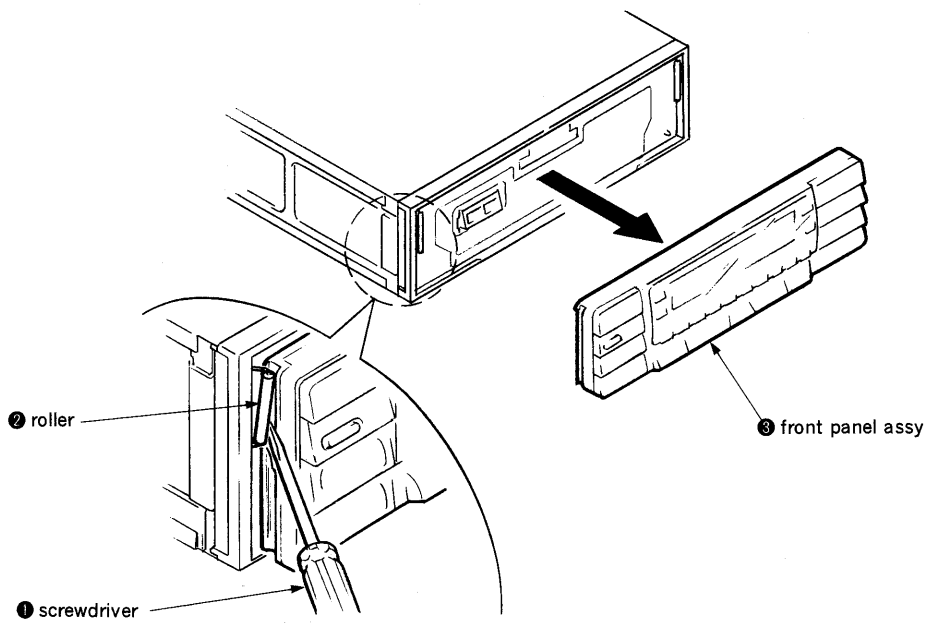
SECTION 2
DISASSEMBLY

Note : Follow the disassembly procedure in the numerical order given.

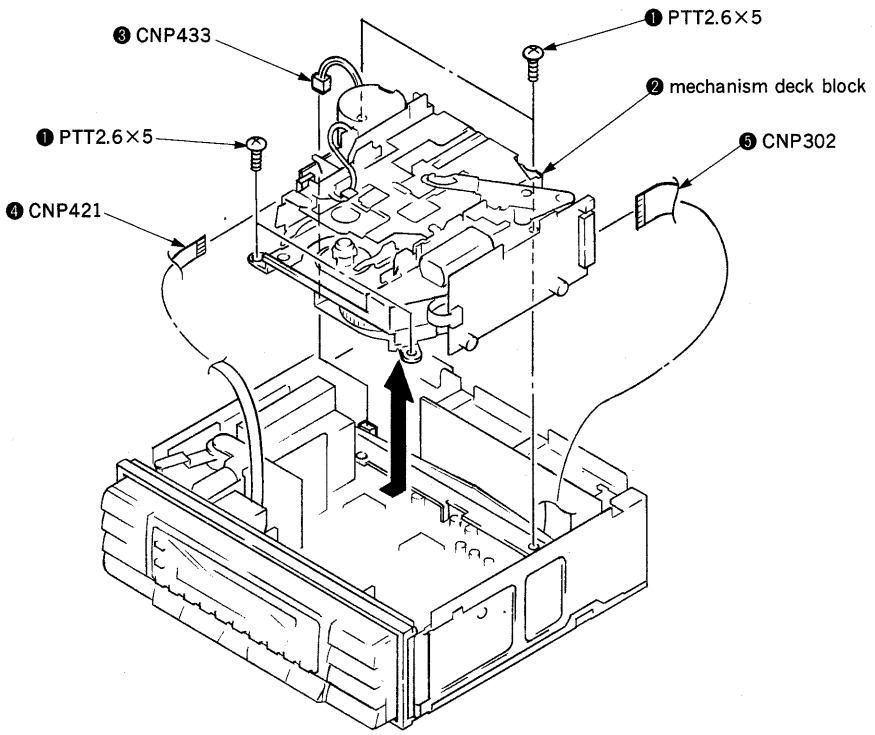
2-1. COVER



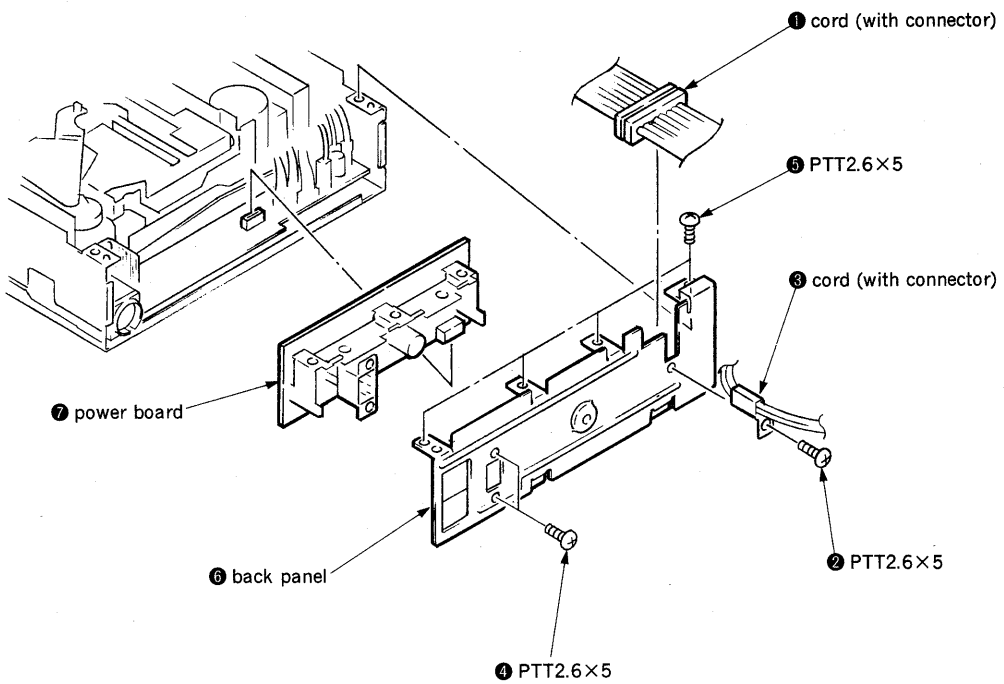
2-2. FRONT PANEL ASSY



2-3. MECHANISM DECK BLOCK



2-4. POWER BOARD



SECTION 3
MECHANICAL ADJUSTMENTS

PRECAUTION

1. Wipe the following components with an absorbent cotton cloth moistened with alcohol before adjustment:
   PB head　　Pinch roller
   Idler　　Rubber belt
   Capstan
2. Demagnetize the PB head using a head demagnetizer.
3. Be careful not to use a magnetized screwdriver.
4. After the adjustment is completed, lock the adjustment parts using screws.
5. Unless otherwise specified, make adjustments at the specified voltage (14.4V).

Torque Measurement

Mode	Torque Meter	Meter Reading
FWD	CQ-102C	35−55g•cm (0.49−0.76 oz•inch)
FWD Back Tension		1.5−4.5g•cm (0.02−0.06 oz•inch)
REV	CQ-102RC	35−55g•cm (0.49−0.76 oz•inch)
REV Back Tension		1.5−4.5g•cm (0.02−0.06 oz•inch)
FF, REW	CQ-201B	80−170g•cm (1.11−2.36 oz•inch)

Tape Tension Measurement

Mode	Tension Meter	Meter Reading
FWD	CQ-403A	more than 100g (more than 3.53 oz)
REV	CQ-403R	

SECTION 4
ELECTRICAL ADJUSTMENTS

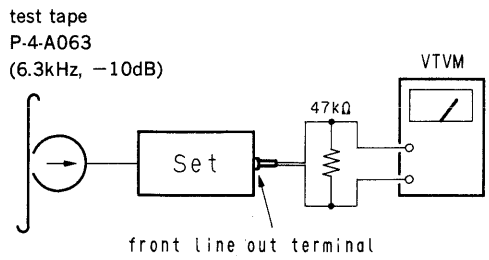
See the adjusting location and measurement location from on page 29 for the adjustment.

DECK SECTION

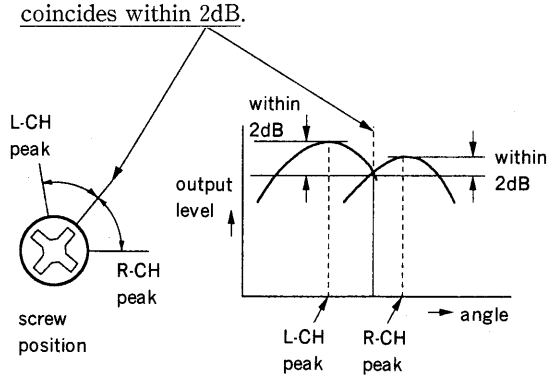
PB Head Azimuth Adjustment

Procedure:

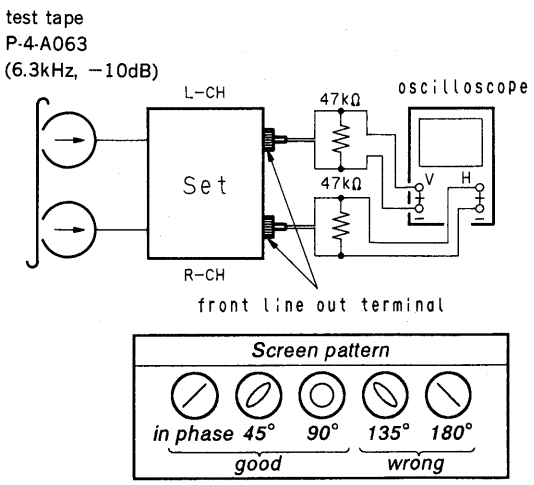
1. Put the set into the FWD PB mode.



2. Turn the screw and check the output peak value. Adjust the screw so that the peak value in channels L and R coincides within 2dB.



3. Check the phase in the PB mode.

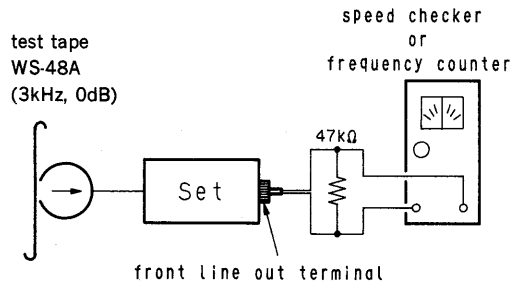


4. Repeat the above adjustment for the PB REV mode.

Capstan Motor Tape Speed Adjustment

Procedure :

1. Put the set into the FWD PB mode.



Specification : Constant speed

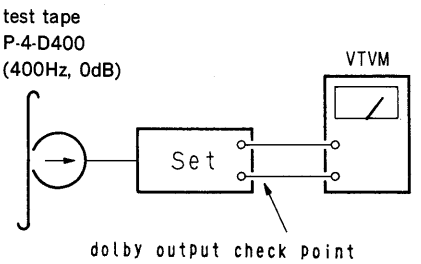
Speed checker	Frequency counter
−1.5 to +1.5%	2,955 to 3,045Hz

Adjustment Location : Capstan Motor Volume

DOLBY Level Adjustment

Setting :

DOLBY NR switch : OFF
VOLUME control : Maximum
BALANCE control : Center
BASS control : Center
TREBLE control : Center



Procedure :

1. Put the set into the FWD PB mode.
2. Adjust RV101 (L-CH) and RV201 (R-CH) so that VTVM reading is −6±0.2dB (0.38 to 0.39V).

Adjustment Location : EQ board

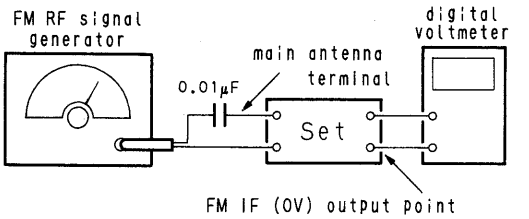
TUNER SECTION

Cautions during repair
When the front end is defective, replace it by a new one because its internal block is difficult to repair.

FM IF (0V) Adjustment

Setting :

BAND switch : FM
FM DIVERSITY switch : OFF
antenna select switch : MAIN



Carrier frequency: 97.9MHz (US, Canadian model)
98MHz (E model)
Output level : 60dB (1mV)
Mode : mono
Modulation : 1kHz, no modulation

Procedure :

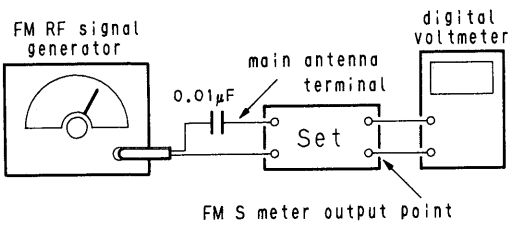
1. Tune the set to 97.9MHz (US, Canadian model) or 98MHz (E model).
2. Adjust T60 for 0±30mV reading on the digital voltmeter.

Adjustment Location : MAIN board

FM Signal Meter Adjustment

Setting :

BAND switch : FM
FM DIVERSITY switch : OFF
antenna select switch : MAIN



Carrier frequency: 97.9MHz (US, Canadian model)
98MHz (E model)
Output level : 35dB (56.2μV)
Mode : mono
Modulation : 1kHz, 75kHz deviation

Procedure :

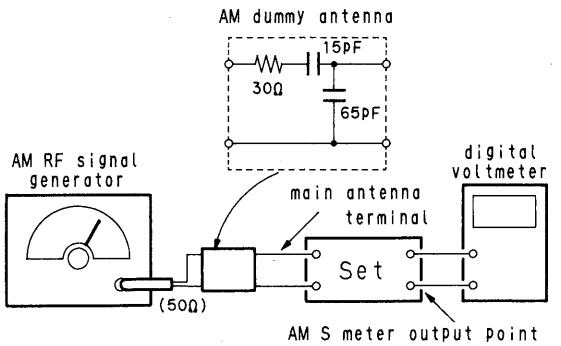
1. Tune the set to 97.9MHz (US, Canadian model) or 98MHz (E model).
2. Adjust RV60 for 4.5±0.1V reading on the digital voltmeter.

Adjustment Location : MAIN board

AM Signal Meter Adjustment

Setting :

BAND switch : AM
FM DIVERSITY switch : OFF
antenna select switch : MAIN



Carrier frequency: 1000kHz (US, Canadian model)
999kHz (E model)
30% amplitude modulation by 400Hz signal
Output level : 120dB (1V)

Procedure :

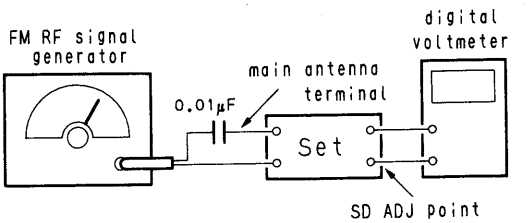
1. Tune the set to 1000kHz (US, Canadian model) or 999MHz (E model).
2. Adjust RV1 for $4^{+0.1}_{-0.5}$V reading on the digital voltmeter.

Adjustment Location : MAIN board

FM Auto Scan/Stop Level Adjustment

Setting :

BAND switch : FM
FM DIVERSITY switch : OFF
antenna select switch : MAIN



Carrier frequency: 97.9MHz (US, Canadian model)
98MHz (E model)
Output level : 25dB (17.8μV)
Mode : mono
Modulation : 1kHz, 75kHz deviation

Procedure :

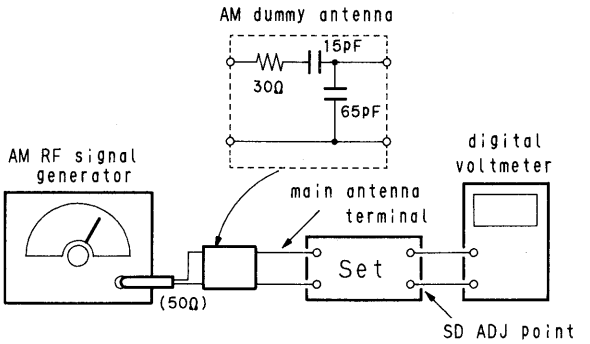
1. Tune the set to 97.9MHz (US, Canadian model) or 98MHz (E model).
2. Adjust RV61 for changes from low to high reading on the digital voltmeter.
3. When the FM RF signal generator output level is 29dB (28.2μV), check that the auto scan stopped.

Adjustment Location : MAIN board

AM Auto Scan/Stop Level Adjustment

Setting :

BAND switch : AM
FM DIVERSITY switch : OFF
antenna select switch : MAIN



Carrier frequency: 1000kHz (US, Canadian model)
999kHz (E model)
30% amplitude modulation by 400Hz signal
Output level : 30dB (31.6μV)

Procedure :

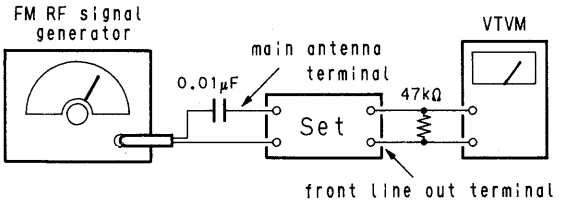
1. Tune the set to 1000kHz (US, Canadian model) or 999kHz (E model).
2. Adjust trimmer resister of inside the AM tuner unit for changes from low to high reading on the digital voltmeter.
3. When the AM RF signal generator output level is 48dB (251.2μV), check that the auto scan stopped.

Adjustment Location : AM tuner unit

FM Stereo Separation Adjustment

Setting :

BAND switch : FM
FM DIVERSITY switch : OFF
antenna select switch : MAIN



Carrier frequency: 97.9MHz (US, Canadian model)
98MHz (E model)
Output level : 70dB (3.2mV)
Mode : stereo
Modulation : main; 1kHz, 33.75kHz deviation (45%)
sub; 1kHz, 33.75kHz deviation (45%)
19kHz pilot; 7.5kHz deviation (10%)

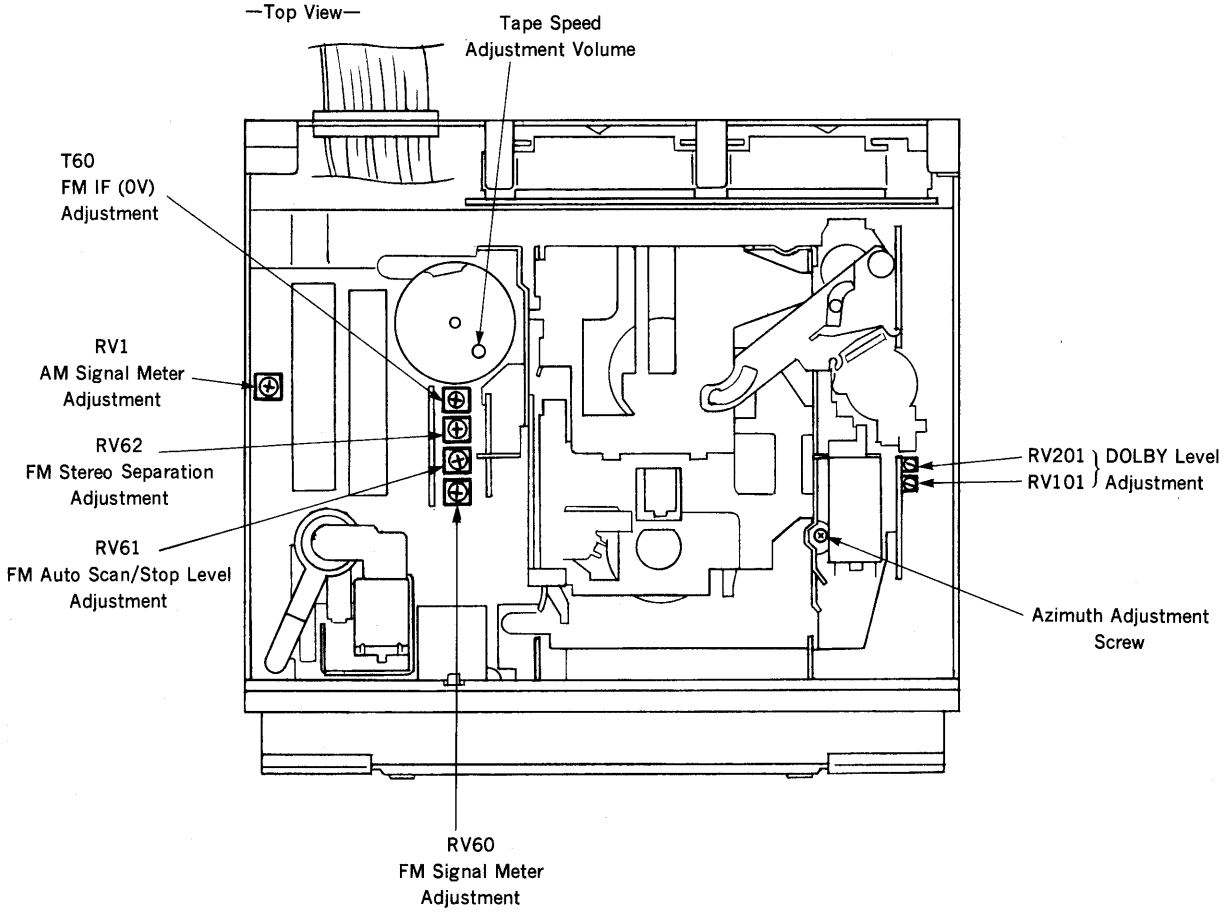
Procedure :

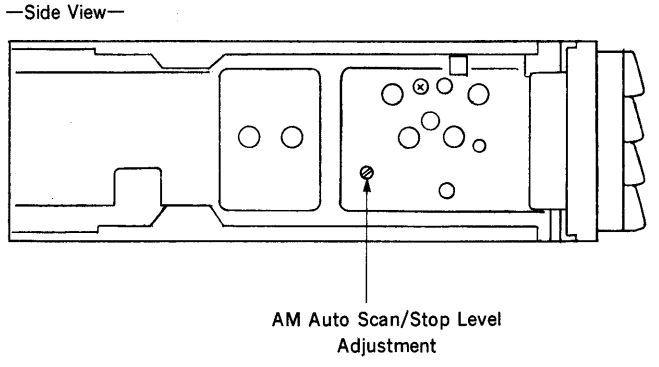
FM stereo signal generator output channel	VTVM connection	VTVM reading (dB)
L-CH	L-CH	Ⓐ
R-CH	L-CH	Ⓑ Adjust RV62 for minimum reading.
R-CH	R-CH	Ⓒ
L-CH	R-CH	Ⓓ Adjust RV62 for minimum

L-CH Stereo separation : Ⓐ−Ⓑ
R-CH Stereo separation : Ⓒ−Ⓓ
The separations of both channels should be equal.

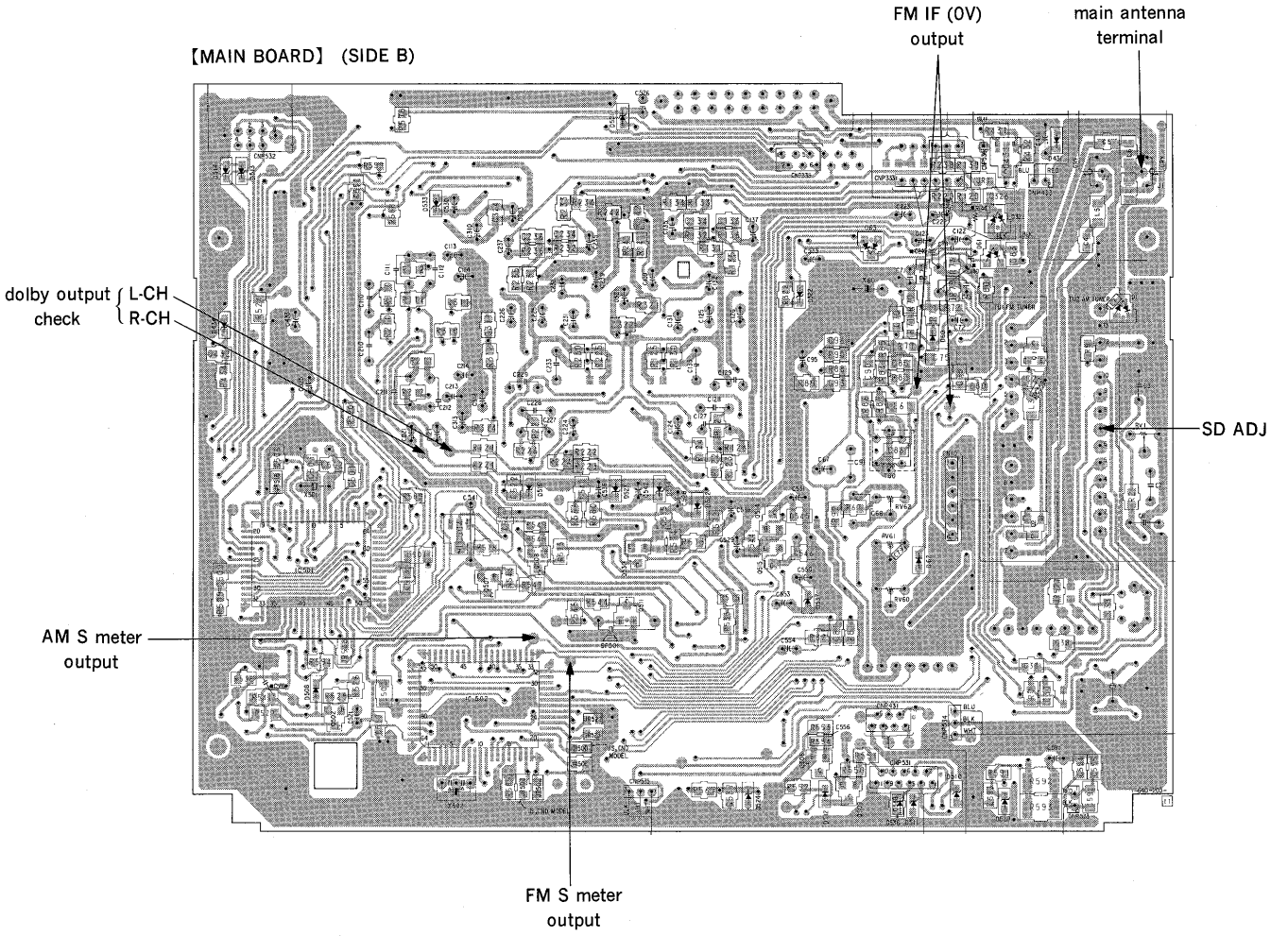
Adjustment Location : MAIN board

Adjustment Location :





Measurement Location :

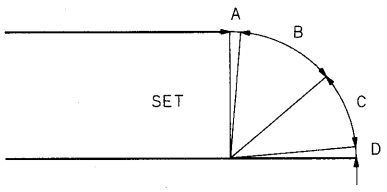


SECTION 5
DIAGRAMS

5-1. PIN DESCRIPTIONS

Master Microcomputer IC501 (μPD75116GF-E47-3BE)

<table>
<tr><th>Pin No.</th><th>Name</th><th>I/O</th><th>Description</th></tr>
<tr><td>63</td><td>POS 3</td><td>I</td><td rowspan="4">Mechanism Deck Position Detection pin.
(See the table below.)
*(With tape rotation in normal direction)
<table>
<tr><th></th><th>EJECT</th><th>STOP</th><th>←→</th><th>FF</th><th>←→</th><th>REW</th><th>←→</th><th>PLAY</th></tr>
<tr><td>POS 0</td><td>L</td><td>L</td><td>L</td><td>H</td><td>H</td><td>H</td><td>H</td><td>H</td></tr>
<tr><td>POS 1</td><td>H</td><td>H</td><td>L</td><td>L</td><td>L</td><td>H</td><td>H</td><td>H</td></tr>
<tr><td>POS 2</td><td>H</td><td>H</td><td>H</td><td>H</td><td>L</td><td>L</td><td>L</td><td>H</td></tr>
<tr><td>POS 3</td><td>L</td><td>H</td><td>H</td><td>H</td><td>H</td><td>H</td><td>L</td><td>L</td></tr>
</table>
H : High input, L : Low input</td></tr>
<tr><td>64</td><td>POS 2</td><td>I</td></tr>
<tr><td>1</td><td>POS 1</td><td>I</td></tr>
<tr><td>2</td><td>POS 0</td><td>I</td></tr>
<tr><td>3</td><td>LINK OFF</td><td>O</td><td>Not used.</td></tr>
<tr><td>4</td><td>AMP ON</td><td>O</td><td>Not used.</td></tr>
<tr><td>5</td><td>POWER-ON</td><td>O</td><td>Power ON/OFF Output pin. Set this output "High" to turn power on. Set it "Low" to turn all power off.</td></tr>
<tr><td>6</td><td>ACC-ON</td><td>O</td><td>Button Illumination Power ON/OFF Output pin. Set this output "High" to turn the power on.</td></tr>
<tr><td>7</td><td>$\overline{\text{RESET}}$</td><td>I</td><td>Reset pin.</td></tr>
<tr><td>8</td><td>X2</td><td>—</td><td rowspan="2">Connection pin for System Clock Oscillation. 4.19MHz connection.</td></tr>
<tr><td>9</td><td>X1</td><td>I</td></tr>
<tr><td>10</td><td>DM CLOSE</td><td>O</td><td rowspan="2">Nose Open/Close Motor Control pin.
<table>
<tr><th>DM OPEN / DM CLOSE</th><th>High</th><th>Low</th></tr>
<tr><td>High</td><td>——</td><td>Close</td></tr>
<tr><td>Low</td><td>Open</td><td>Stopped</td></tr>
</table></td></tr>
<tr><td>11</td><td>DM OPEN</td><td>O</td></tr>
<tr><td>12</td><td>$\overline{\text{SYSTEM RESET}}$</td><td>O</td><td>Pin which resets all of slave microcomputers that are connected and are communicating on the UNILINK BUS. Switching this output from "Low" to "High" level causes resetting. Usually it is kept "High".</td></tr>
<tr><td>13</td><td>SYNC</td><td>O</td><td>Pin which outputs the pulse for determining timing of communication to data line. (UNILINK BUS interface SYNC pin)</td></tr>
<tr><td>14</td><td>MUTE</td><td>O</td><td>Output pin used to enable Audio Muting. This output is kept "High" during audio muting.</td></tr>
<tr><td>15</td><td>CLK VOL</td><td>O</td><td>Pin for Clock Output to the electronics VOL IC (IC 321: LC7537AN).</td></tr>
<tr><td>16</td><td>DATA VOL</td><td>O</td><td>Pin for Data Output to the electronics VOL IC.</td></tr>
<tr><td>17</td><td>CE VOL</td><td>O</td><td>Pin for CE Output to the electronics VOL IC. This output is used as the latch signal to send data.</td></tr>
<tr><td>18</td><td>NOSE</td><td>I</td><td>Initialization pin which determines whether the nose is removed or not. When this input is "High", there are no nose removal failure caution alarm, no cassette EJECT and no nose open function (by means of pressing OPEN button for two sec).</td></tr>
<tr><td>19</td><td>B/C (INT)</td><td>I</td><td>Initialization pin which determines whether Dolby B NR only or Dolby B and C NR. When "Low", this input sets both B and C. When "High", it sets B only.</td></tr>
</table>

<table>
<tr><th>Pin No.</th><th>Name</th><th>I/O</th><th>Description</th></tr>
<tr><td>20</td><td>$\overline{\text{CLOCK}}$</td><td>I</td><td>Initialization pin which determines whether the internal clock is present or not. When "Low", this input initializes the system with the clock present.</td></tr>
<tr><td>21</td><td>POWER SELECT</td><td>I</td><td>Power Select switch (initialization). Set this input "Low" to select Power select OFF setting (to cope with cars without accessary position).</td></tr>
<tr><td>22</td><td>PL</td><td>O</td><td>MD Plunger Control pin.</td></tr>
<tr><td>23</td><td>CM</td><td>O</td><td>MD Capstan Motor Control pin.</td></tr>
<tr><td>24</td><td>LM−</td><td>O</td><td rowspan="3">MD Loading Motor Control pin
<table><tr><th>LM− / LM+</th><th>High</th><th>Low</th></tr><tr><td>High</td><td>Brake</td><td>Loading Direction</td></tr><tr><td>Low</td><td>Eject Direction</td><td>Stopped</td></tr></table></td></tr>
<tr><td>25</td><td>LM+</td><td>O</td></tr>
<tr><td></td><td></td><td></td></tr>
<tr><td>26</td><td>Vss</td><td>—</td><td>Vss pin.</td></tr>
<tr><td>27</td><td>DP 0</td><td>I</td><td rowspan="3">Door (Nose) Position Detection pin.
 

<table><tr><th>Position</th><th>A</th><th>B</th><th>C</th><th>D</th></tr><tr><td>DP0</td><td>H</td><td>H</td><td>L</td><td>L</td></tr><tr><td>DP1</td><td>H</td><td>L</td><td>L</td><td>H</td></tr></table></td></tr>
<tr><td>28</td><td>DP 1</td><td>I</td></tr>
<tr><td></td><td></td><td></td></tr>
<tr><td>29</td><td>NSW</td><td>I</td><td>Nose Presence Detection pin. When "Low", this input indicates that the nose is removed.</td></tr>
<tr><td>30</td><td>CSW</td><td>I</td><td>Cassette Tape Presence Detection pin. When "High", this input indicates that cassette tape is present.</td></tr>
<tr><td>31</td><td>REEL 1</td><td>I</td><td>Cassette Tape Rotation Detection pin (this input indicates Take up side when tape is being rotated in normal direction).</td></tr>
<tr><td>32</td><td>REEL 2</td><td>I</td><td>Cassette Tape Rotation Detection pin (this input indicates Supply side when tape is being rotated in normal direction).</td></tr>
<tr><td>33</td><td>F/$\overline{\text{R}}$</td><td>I</td><td>Cassette Tape Run Direction Detection pin. When "Low", this input indicates REVERSE.</td></tr>
<tr><td>34</td><td>——</td><td>—</td><td>Not used. (Connected to GND.)</td></tr>
<tr><td>35</td><td>——</td><td>—</td><td>Not used. (Connected to GND.)</td></tr>
<tr><td>36</td><td>——</td><td>—</td><td>Not used. (Connected to GND.)</td></tr>
<tr><td>37</td><td>CLK OUT</td><td>O</td><td>Serial Communication Clock Output pin. (UNILINK BUS Interface Clock Output pin)</td></tr>
<tr><td>38</td><td>$\overline{\text{BUS ON}}$</td><td>O</td><td>UNILINK BUS Interface Bus ON Output terminal. Set this output "Low" to enable communication on the bus.</td></tr>
<tr><td>39</td><td>KEY RESET</td><td>O</td><td>Pin which resets the KEY DISPALY mircocomputer (IC 702).</td></tr>
<tr><td>40</td><td>BEEP</td><td>O</td><td>BEEP Output pin.</td></tr>
<tr><td>41</td><td>SI</td><td>I</td><td>Serves as both Serial Data Input pin and Detection pin for Communication Request from slave. (UNILINK BUS Interface Data Input pin)</td></tr>
</table>

Pin No.	Name	I/O	Description
42	SO	O	Serial Data Output pin. (UNILINK BUS Interface Data Output pin)
43	CLK IN	I	Serial Communication Clock Input pin.
44	BU CHECK	I	Power Voltage Detection pin.
45	$\overline{\text{ACC CHECK}}$	I	Accessory Voltage Detection pin. When "High", this input indicates ACC OFF.
46	$\overline{\text{TEL MUTE}}$	I	Pins which detects a telephone call. This input becomes "Low" to mute −20dB audio signal. It becomes "High" to return the signal to its original VOL level.
47	———	—	Not used. (Connected to GND.)
48	$\overline{\text{TV}}$/TV1,2	I	Intialization pin for the number of bands (preset count) for TV when the Hide-away TV tuner is connected. When "Low", this input sets 1 band (preset count to 10). When " High", it sets 2 bands for TV1,TV2 (preset count to 20).
49	$\overline{\text{KEY 5V}}$	O	Power Control pin for the KEY DISPALY microcomputer. Set this output "Low" to turn the power on.
50	$\overline{\text{AUX ON}}$	O	This output is "Low" when supplied as an external input of UNILINK IN AUDIO to CD, TV, etc. It supplies high impedance to other destinations.
51	$\overline{\text{D ON}}$	O	This output is "Low" when sound is being produced from cassette tape. Ohterwise, it supplies high impedance.
52	———	—	Not used.
53	———	—	Not used.
54	ANT ON	O	This output supplies high impedance when the tuner or TV is on. It is "Low" when any other source is on.
55	———	—	Not used.
56	———	—	Not used.
57	NC	—	Connected to VDD.
58	V_{DD}	—	V_{DD} pin.
59	B/C	O	This output is "High" when Dolby B NR is on. It is "Low" output when C NR is on.
60	DNR ON	O	This output is "Low" when Dolby NR is on. It is "High" when Dolby NR is off.
61	$\overline{\text{AMS IN}}$	I	Detection pin which determines whether tape sound is present or not. This input is "Low" when tape sound is present.
62	MTL	I	Tape $\overline{\text{NORMAL}}$/METAL Detection pin. This input is "Low" when normal tape is used.

Tuner Microcomputer IC502 (μPD75116GF-E68-3BE)

<table>
<tr><th>Pin No.</th><th>Name</th><th>I/O</th><th>Description</th></tr>
<tr><td>1</td><td>S2</td><td>O</td><td rowspan="2">Source Select Output pin (Voice Select)
<table><tr><th></th><th>MUTE</th><th>AM</th><th>FM</th></tr><tr><td>S1</td><td>Low</td><td>High</td><td>Low</td></tr><tr><td>S2</td><td>High</td><td>Low</td><td>Low</td></tr></table></td></tr>
<tr><td>2</td><td>S1</td><td>O</td></tr>
<tr><td>3</td><td>—</td><td>—</td><td rowspan="4">Not used</td></tr>
<tr><td>4</td><td>—</td><td>—</td></tr>
<tr><td>5</td><td>—</td><td>—</td></tr>
<tr><td>6</td><td>—</td><td>—</td></tr>
<tr><td>7</td><td>$\overline{\text{RESET}}$</td><td>I</td><td>Reset pin</td></tr>
<tr><td>8</td><td>X2</td><td>O</td><td>Oscillation output</td></tr>
<tr><td>9</td><td>X1</td><td>I</td><td>Oscillation input</td></tr>
<tr><td>10</td><td>PLL-DI</td><td>I</td><td>PLL Data input</td></tr>
<tr><td>11</td><td>PLL-DO</td><td>O</td><td>PLL Data output</td></tr>
<tr><td>12</td><td>PLL-CLK</td><td>O</td><td>PLL Clock output</td></tr>
<tr><td>13</td><td>PLL-CE</td><td>O</td><td>PLL Strobe output</td></tr>
<tr><td>14</td><td>MS7</td><td>I</td><td>Normal mode : Low, Hide-away mode : High</td></tr>
<tr><td>15</td><td>MS6</td><td>I</td><td>Not used</td></tr>
<tr><td>16</td><td>MS5</td><td>I</td><td>Normal : Low, E^1 PROM Reset : High</td></tr>
<tr><td>17</td><td>MS4</td><td>I</td><td>Not used</td></tr>
<tr><td>18</td><td>MS3</td><td>I</td><td rowspan="5"><table><tr><th></th><th>US, Canadian Model</th><th>E Model</th></tr><tr><td>MS0</td><td>Low</td><td>9k step : Low
10k step : High</td></tr><tr><td>MS1</td><td>Low</td><td>Low</td></tr><tr><td>MS2</td><td>Low</td><td>Low</td></tr><tr><td>MS3</td><td>Low</td><td>High</td></tr></table></td></tr>
<tr><td>19</td><td>MS2</td><td>I</td></tr>
<tr><td>20</td><td>MS1</td><td>I</td></tr>
<tr><td>21</td><td>MS0</td><td>I</td></tr>
<tr><td></td><td></td><td></td></tr>
<tr><td>22</td><td>RDS-DI</td><td>I</td><td rowspan="4">Not used</td></tr>
<tr><td>23</td><td>RDS-Start</td><td>I</td></tr>
<tr><td>24</td><td>RDS-ERR</td><td>I</td></tr>
<tr><td>25</td><td>RDS-Receive</td><td>I</td></tr>
<tr><td>26</td><td>VSS</td><td>—</td><td>GND</td></tr>
<tr><td>27</td><td>SK</td><td>I</td><td rowspan="3">Not used</td></tr>
<tr><td>28</td><td>DK</td><td>I</td></tr>
<tr><td>29</td><td>RDS-CLK</td><td>I</td></tr>
<tr><td>30</td><td>BUS-ON</td><td>I</td><td>Bus Interface Bus ON</td></tr>
<tr><td>31</td><td>$\overline{\text{BUS}}$</td><td>I</td><td>Bilingual Datect Input pin</td></tr>
<tr><td>32</td><td>$\overline{\text{ST}}$</td><td>I</td><td>STEREO Input pin, Low : STEREO</td></tr>
<tr><td>33</td><td>Vsm (FM)</td><td>I</td><td>FM S Meter Voltage Detect pin</td></tr>
<tr><td>34</td><td>Vsm (AM)</td><td>I</td><td>AM S Meter Voltage Detect pin</td></tr>
</table>

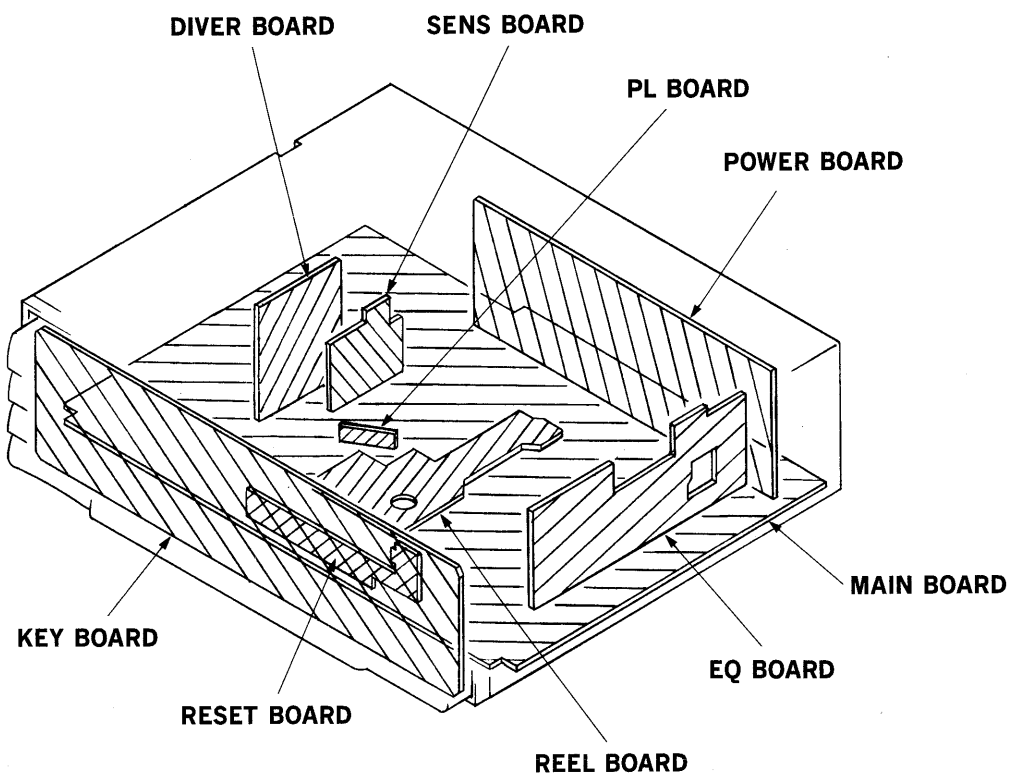
Pin No.	Name	I/O	Description
35	—	—	Not used
36	—	—	
37	ANT-ON	O	
38	$\overline{\text{RDS-RESET}}$	O	
39	REQUEST	O	Bus Interface Request
40	LINK-OFF	O	Bus Interface Link OFF
41	SI	I	Bus Interface Data Input
42	SO	O	Bus Interface Date Output
43	SCK	I	Bus Interface Clock input
44	BUP	I	Back UP Check
45	$\overline{\text{DX}}$/LO	O	Not used
46	$\overline{\text{WIDE}}$/NARROW	I	
47	—	—	
48	ST/$\overline{\text{MONO}}$	O	Compulsion Monoral Output pin, Low : Compulsion MONO
49	$\overline{\text{SEEK}}$	O	Not used
50	—	—	
51	$\overline{\text{FM-FE ON}}$	O	FM Power Source Control pin
51	$\overline{\text{AM-FE ON}}$	O	AM Power Source Control pin
53	MUTE	O	Not used
54	—	—	
55	$\overline{\text{FM-MPX ON}}$	O	FM Voice Section Power Source Control pin
56	FM-MPX-ON	O	AM Voice Section Power Source Control pin
57	VDD	—	+5V
58	VDD	—	
59	DS	I/O	DS Input pin (Mute on AM receive : Low output)
60	DIVER	I/O	Diver Select pin, Low : MAIN, High : SUB, HI-Z : AUTO
61	E^{1}P-SCK	O	E^{1}PROM Clock Output
62	E^{1}P-SDA	I/O	E^{1}PROM Data Input/Output
63	$\overline{\text{E}^1\text{ P-ON}}$	O	Not used
64	MUTE	O	Mute Output pin (CMOS Push-pull)

Key Display Mircocomputer IC702 (μPD75008GB-632-3B4)

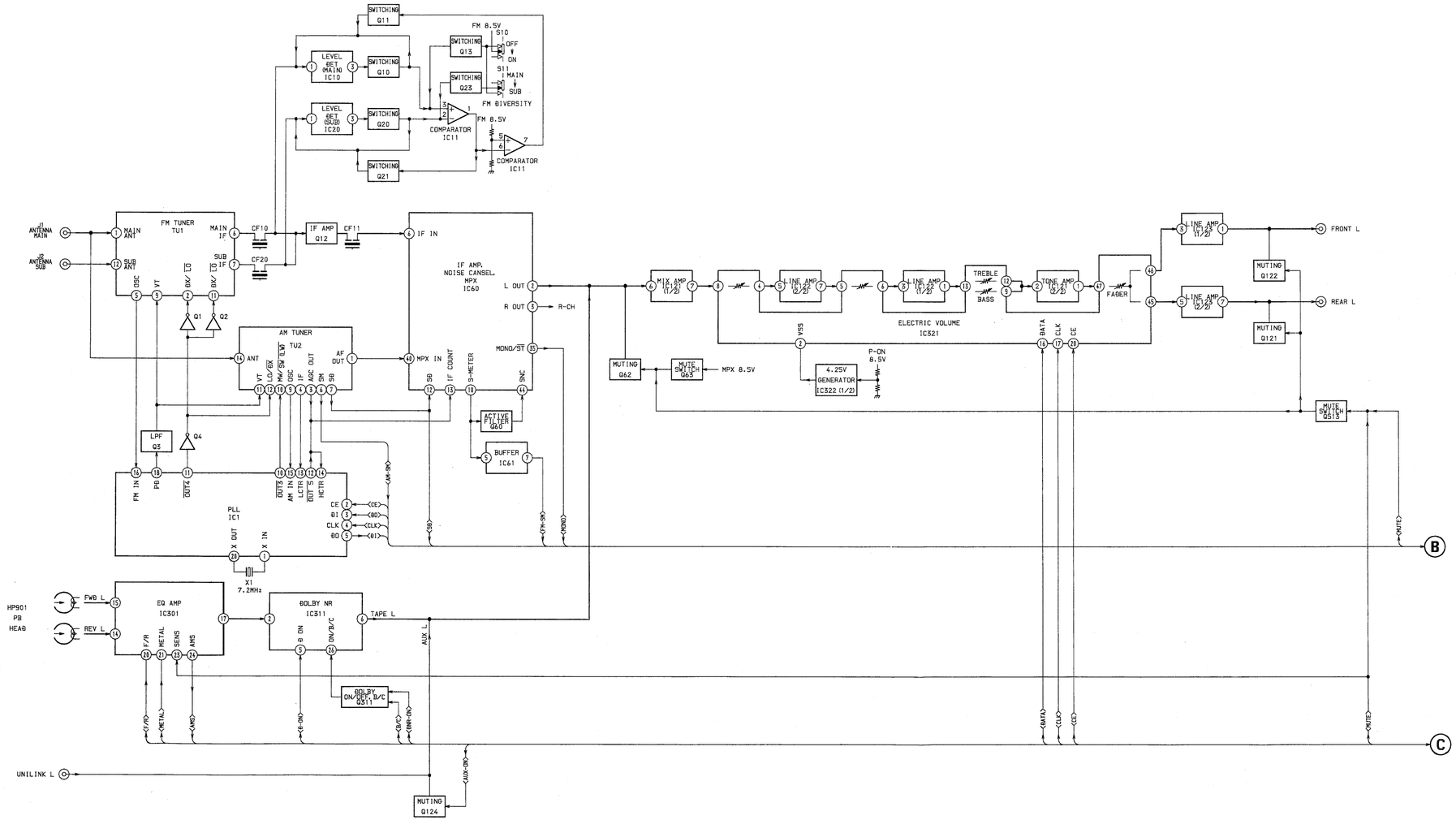
Pin No.	Name	I/O	Description
44	KI7	I	KEY SCAN Input pin.
1	KI6	I	
2	KI5	I	
3	KI4	I	
4	KI3	I	
5	KI2	I	
6	KI1	I	
7	KI0	I	
8	KO3	O	KEY SCAN Output pin.
9	KO2	O	
10	KO1	O	
11	KO0	O	
12	NC	—	(Connected to VDD.)
13	———	—	Not used.
14	———	—	
15	———	—	
16	———	—	
17	V_{SS}	—	V_{SS} pin.
18	XT1	—	(Connected to GND.)
19	XT2	—	Not used.
20	$\overline{\text{RESET}}$	I	Reset pin.
21	X1	I	Connection pin for System Clock oscillation. 4.19MHz connection.
22	X2	—	
23	LCD CLK	O	Pin for Clock Output to LCD DRIVER IC (IC 703: TC9240F)
24	LCD DATA	O	Pin for Data Output to LCD DRIVER IC.
25	LCD CE	O	Pin for CE Output to LCD DRIVER IC. This output is used as the latch signal to send data.
26	LCD INH	O	Pin for INH Output to LCD DRIVER IC.
27	LINK OFF	O	Not used.
28	REQ	O	UNILINK BUS Interface Request pin. This pin is "High" to request communication from the master microcomputer (IC 501).
29	DATA IN	I	Serves as both Serial Data Input pin and Detection pin for Communication Request from slave. (UNILINK BUS Interface Data Input pin)
30	DATA OUT	O	Serial Data Output pin. (UNILINK BUS Interface Data Output pin)
31	CLK IN	I	Serial Communication Clock Input pin. (UNILINK BUS Interface Clock Input pin)
32	BU CHECK	I	Power Voltage Detection pin.
33	———	—	(Connected to GND.)
34	NC	—	(Connected to VDD.)
35	$\overline{\text{TV CONT}}$	I	Intialization pin which determines whether Hide-away TV tuner control function is enabled or disabled. When "Low", this input enables TV control. When "High", it disables TV control. Arailable only for US and Canadian specifications.
36	$\overline{\text{BUS ON}}$	I	UNILINK BUS Interface Bus ON Terminal. When this output is "Low", communication on the bus is enabled.

Pin No.	Name	I/O	Description
37	SIRCS	I	Infrared Remote Control Input pin.
38	NC	—	(Connected to V_{DD}.)
39	V_{DD}	—	V_{DD} pin.
40	LCD ON	O	LCD Back Illumination and LCD DRIVER IC Power Control pin.
41	ACC-ON ILL	O	Button Illumination Output for function keys. This output is "High" when ACC is ON and it is "Low" when ACC is OFF (with Power Select switch selected ON).
42	P-ON ILL	O	Button Illumination Output pin for buttons other than function keys. This output is "High" when power is turned on and it is "Low" when power is turned off.
43	COLOR	O	Illunimation Color Select Output pin. Set this output "High" to select Green. Set it "Low" to select Amber.

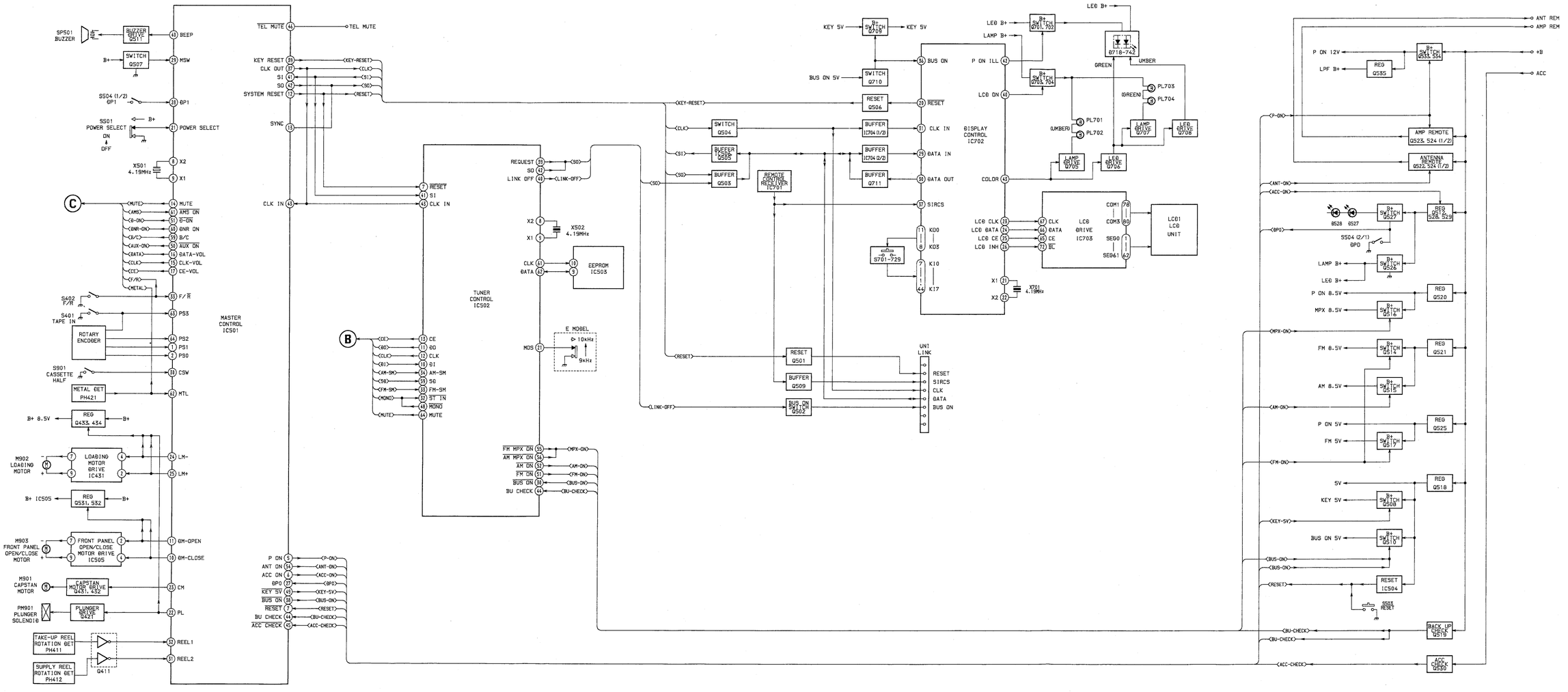
5-2. CIRCUIT BOARDS LOCATION



5-3. AUDIO BLOCK DIAGRAM

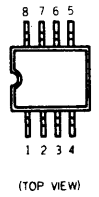


5-4. SYSTEM CONTROL BLOCK DIAGRAM



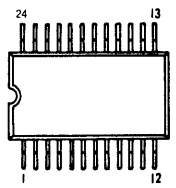
5-5. SEMICONDUCTOR LEAD LAYOUTS

BA10358F
LM2903M
NJM4580E-D
XRA10393F



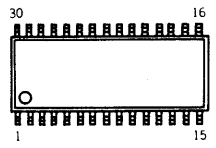
(TOP VIEW)

BA3430FS



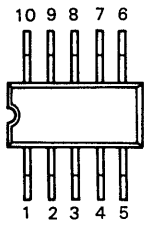
(TOP VIEW)

CXA1332M

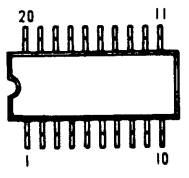


(Top view)

LB1638M

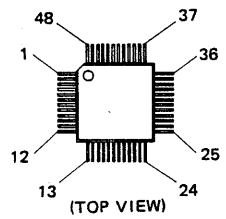


LC7216M



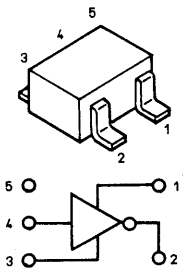
(TOP VIEW)

LC7537AN

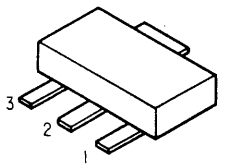


(TOP VIEW)

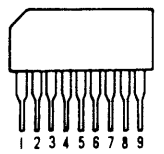
NJM2406F



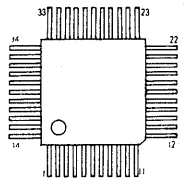
S-8054HN-CB



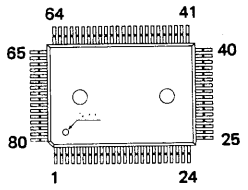
TA7303P



TA8172AF
μPD75008GB-632-3B4

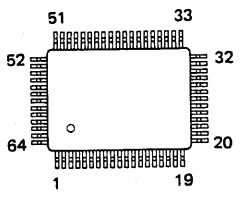


TC9240F



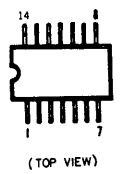
MARKING SIDE VIEW

μPD75116GF-E47-3BE
μPD75116GF-E68-3BE



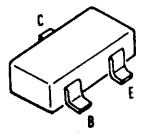
(TOP VIEW)

X24C04SI

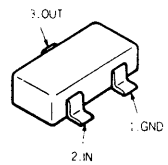


(TOP VIEW)

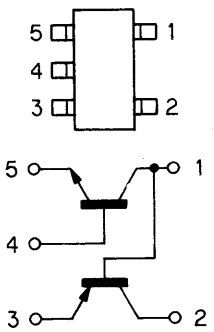
DTA114EK
DTA124EK
DTC114EK
DTC114TK
DTC124EK
DTC314TKH04
2SA1162-G
2SC1623-L5L6
2SD1759F5



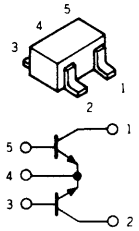
DTB144EK
DTB123YK
DTD113EK



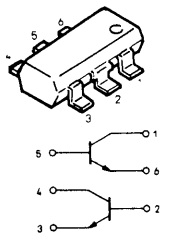
FMC3



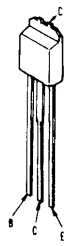
FMG1
FMG2
FMG9
FMW1



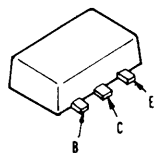
IMX1



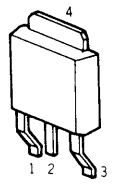
2SA1385



2SB1115A
2SD1615A-GB

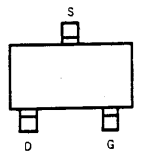


2SD1760F5-Q

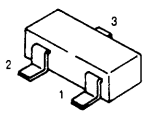


1. BASE
2. COLLECTOR
3. EMITTER
4. COLLECTOR

2SK360E

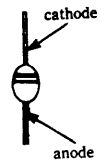


2SK536

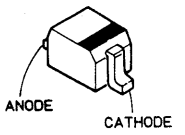


1. Drain
2. Gate
3. Source

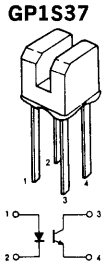
DSA3A4



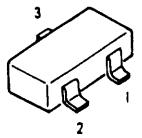
DTZ10B
DTZ11B
DTZ3.6
DTZ5.1C
DTZ5.6B
DTZ6.2B
DTZ7.5B
DTZ7.5C
DTZ9.1C
1SS332



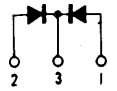
GP1S37

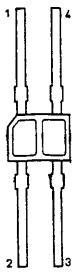


MA152WK



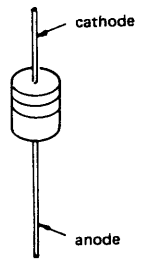
PR-11-B



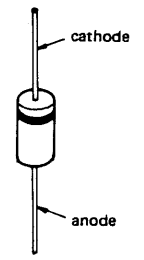


1. ANODE
2. CATHODE
3. EMITTER
4. COLLECTOR

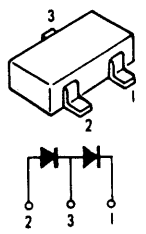
1SR139-400



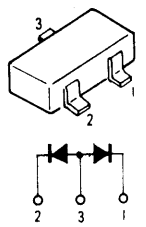
1SV154



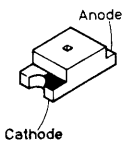
1SS226



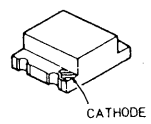
1S2836



CL-150Y-CD



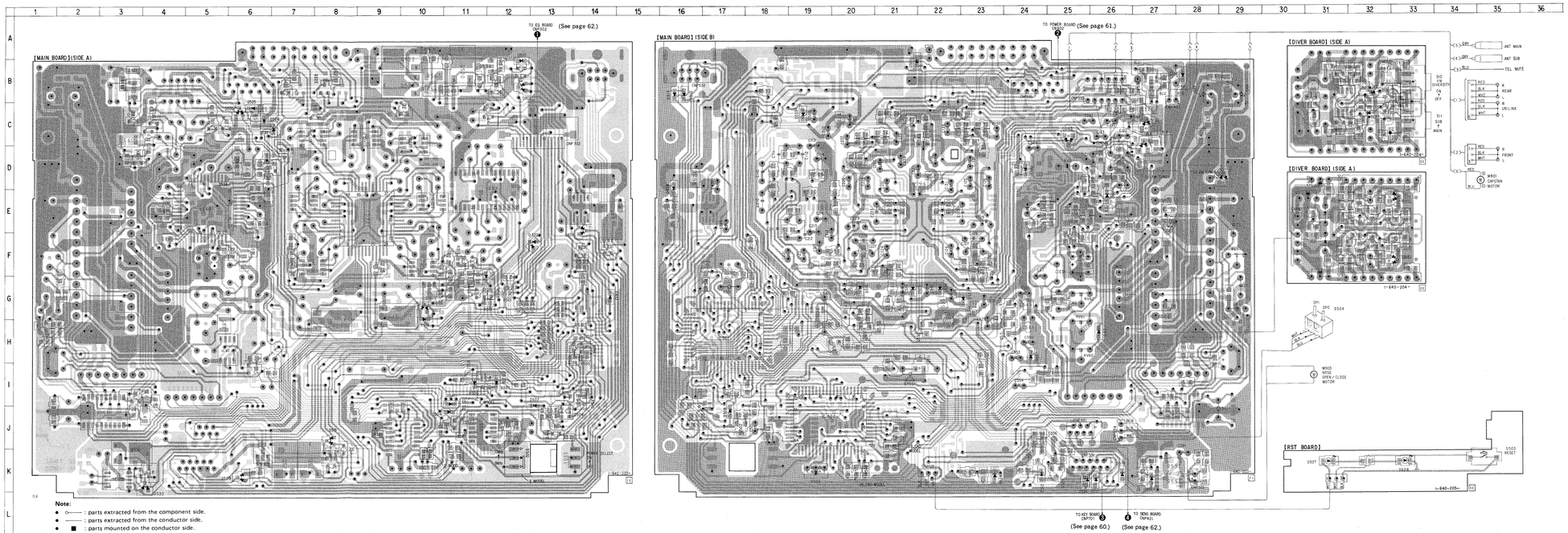
CL-155Y/PG-CD

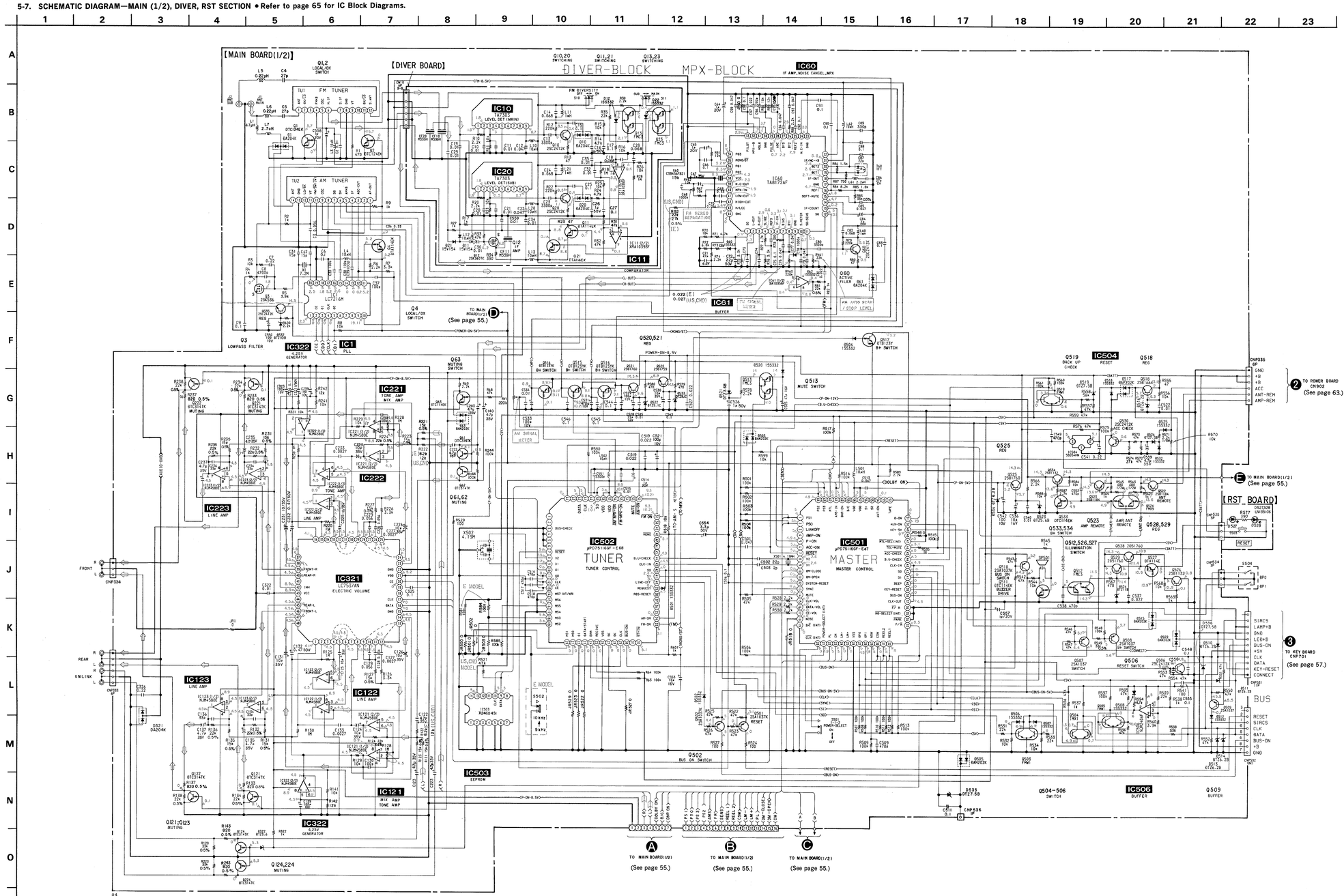


• Semiconductor Location

Ref. No.	Location	Ref. No.	Location	Ref. No.	Location
D1	D-29	IC122	E-7	Q521	H-8
D10	F-32	IC123	C-7	Q522	B-10
D11	F-31	IC221	F-10	Q523	B-10
D12	B-32	IC222	E-10	Q524	C-11
D20	E-32	IC223	C-10	Q525	G-9
D21	E-31	IC311	D-12	Q526	K-6
D22	C-32	IC321	E-9	Q527	K-8
D60	E-26	IC322	C-9	Q528	K-7
D61	C-27	IC431	E-14	Q529	K-7
D62	H-26	IC501	H-17	Q530	H-22
D63	C-25	IC502	J-19	Q531	K-4
D320	F-12	IC503	J-11	Q532	K-3
D321	C-27	IC504	G-19	Q533	B-12
D322	D-24	IC505	K-3	Q534	B-11
D431	B-27	IC506	I-13	Q535	I-6
D432	G-14				
D433	E-14	Q1	E-27		
D434	D-16	Q2	G-27		
D501	I-11	Q3	H-1		
D502	I-13	Q4	I-3		
D503	B-12	Q10	F-32		
D504	J-11	Q11	B-31		
D505	C-6	Q12	C-31		
D506	I-11	Q13	B-32		
D507	I-12	Q20	E-32		
D508	J-17	Q21	C-31		
D509	K-6	Q23	C-32		
D510	K-26	Q60	D-3		
D511	K-25	Q61	C-4		
D512	K-24	Q62	C-4		
D513	B-16	Q63	D-7		
D514	B-16	Q121	C-7		
D515	J-8	Q122	B-7		
D516	G-20	Q124	C-5		
D517	G-10	Q221	C-10		
D518	G-10	Q222	B-8		
D519	F-11	Q224	C-5		
D520	B-12	Q311	F-11		
D521	B-21	Q431	B-27		
D522	G-22	Q432	C-3		
D523	G-21	Q433	E-14		
D524	K-23	Q434	F-14		
D525	C-6	Q501	F-14		
D526	C-6	Q502	J-17		
D527	K-31	Q503	I-11		
D528	K-33	Q504	J-13		
D529	K-27	Q505	H-14		
D530	K-4	Q506	K-24		
D532	C-6	Q507	H-19		
D533	C-19	Q508	H-20		
D534	G-22	Q509	K-25		
D535	B-3	Q510	J-13		
D536	K-25	Q511	I-21		
D537	H-24	Q512	K-8		
		Q513	B-12		
IC1	J-3	Q514	G-23		
IC10	G-31	Q515	H-23		
IC11	B-31	Q516	D-6		
IC20	D-31	Q517	J-11		
IC60	E-5	Q518	G-10		
IC61	H-5	Q519	G-11		
IC121	F-7	Q520	B-11		

5-6. PRINTED WIRING BOARDS—MAIN, DIVER, RST SECTION— • Refer to page 44 for Semiconductor Lead Layouts.

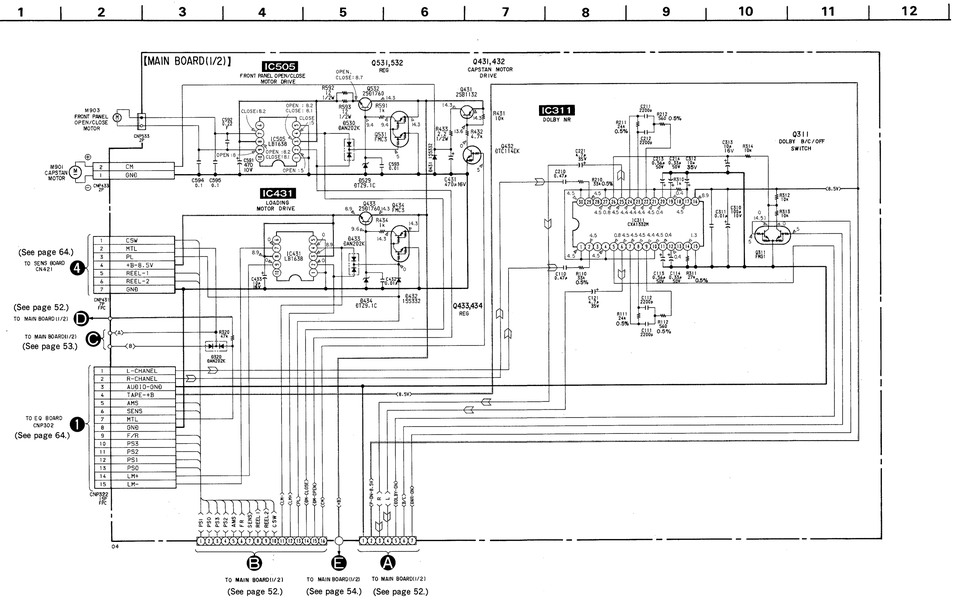

[MAIN BOARD] (SIDE A)
[MAIN BOARD] (SIDE B)
TO ED BOARD CNP402 (See page 62.)
TO POWER BOARD CNP501 (See page 61.)
[DIVER BOARD] (SIDE A)
[DIVER BOARD] (SIDE A)
[RST BOARD]
ANT MAIN
ANT SUB
TEL MUTE
SIO TR DIVERSITY ON OFF
SW SUB ↑ MAIN
REAR
FRONT
MOTOR EJECTION TO MOTOR
S504
S505 RESET
W503 NOTE OPEN-√ CLOSE MOTOR
TO KEY BOARD CNP701 (See page 60.)
TO SENS BOARD CNP402 (See page 62.)
Note:
• ○—— : parts extracted from the component side.
• ——— : parts extracted from the conductor side.
• ■ : parts mounted on the conductor side.
• ● : Through hole.
• : Pattern on the side which is seen.
• : Pattern of the rear side.
• CND : Canadian model



Note:

- All capacitors are in μF unless otherwise noted. pF: μμF
  50WV or less are not indicated except for electrolytics and tantalums.
- All resistors are in Ω and 1/4 W or less unless otherwise specified.
- % : indicates tolerance.
- △ : internal component.
- : B + Line
- : adjustment for repair.
- Power voltage is dc 14.4V and fed with regulated dc power supply from BAT and ACC terminals.
- Voltage and waveforms are dc with respect to ground under no-signal (detuned) conditions.
  no mark : FM or PB
  ( ) : AM
  ※ : Impossible to measure the voltage at the marked points.
- Voltages are taken with a VOM (Input Impedance 10MΩ). Voltage variations may be noted due to normal production tolerances.
- Signal path.
  : FM : PB
- CND : Canadian model

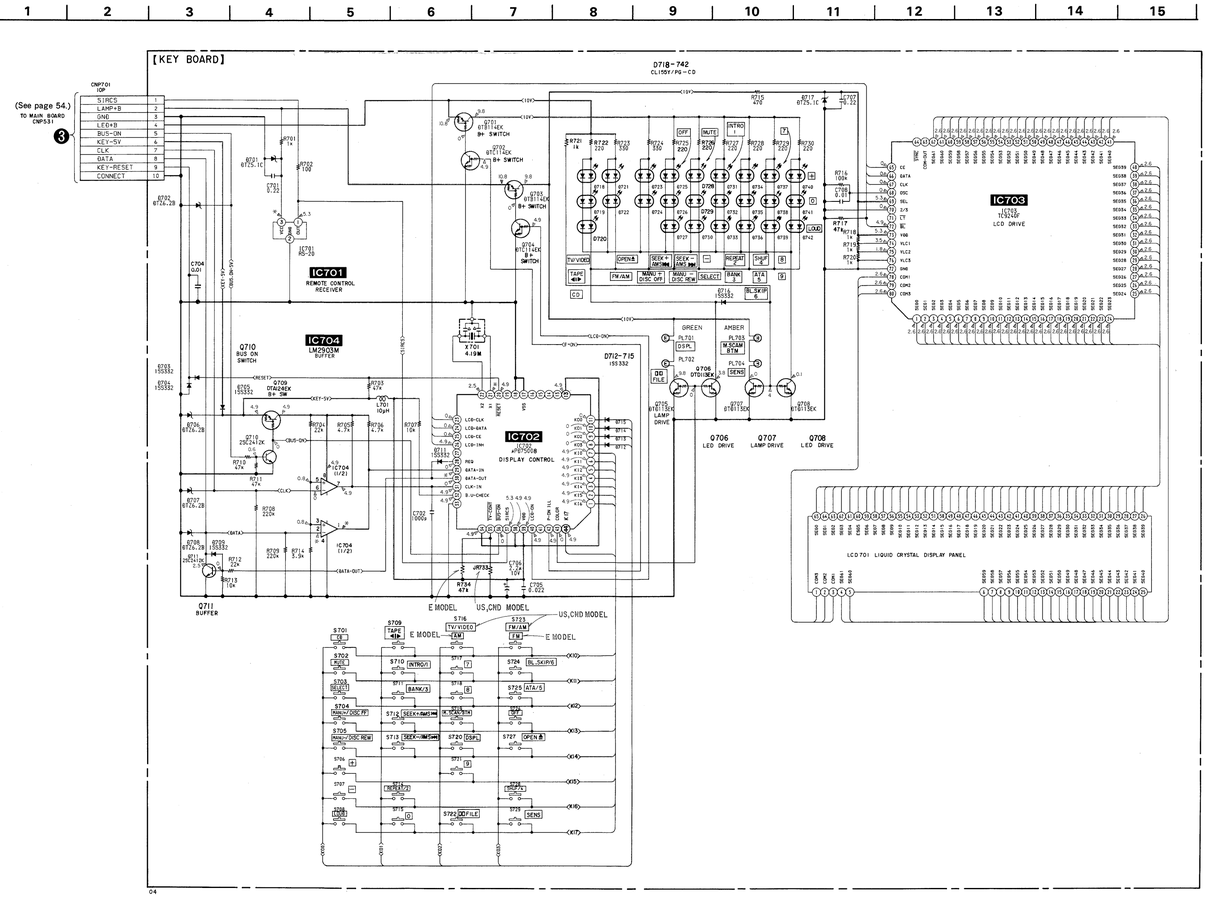
5-8. SCHEMATIC DIAGRAM—MAIN (1/2) SECTION— • Refer to page 65 for IC Block Diagrams.



Note:

- All capacitors are in μF unless otherwise noted. pF: μμF 50WV or less are not indicated except for electrolytics and tantalums.
- All resistors are in Ω and 1/4W or less unless otherwise specified.
- % : indicates tolerance.
- △ : internal component.
- ═══ : B+ Line
- Power voltage is dc 14.4V and fed with regulated dc power supply from BAT and ACC terminals.
- Voltage and waveforms are dc with respect to ground under no-signal (detuned) conditions.
  no mark : FM or PB
  ※ : Impossible to measure the voltage at the marked points.
- Voltages are taken with a VOM (Input Impedance 10MΩ). Voltage variations may be noted due to normal production tolerances.
- Signal path.
  ▷ : PB

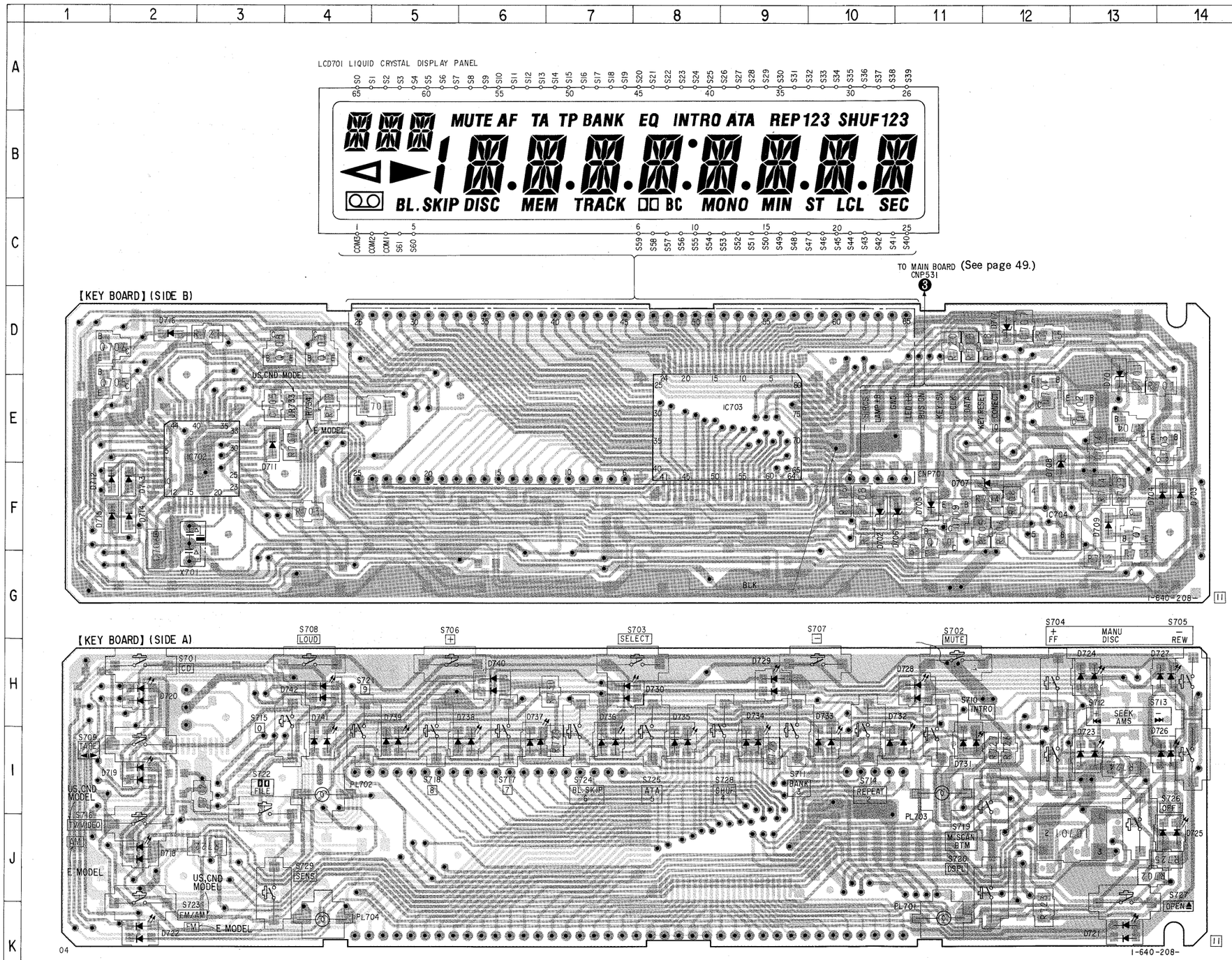
5-9. SCHEMATIC DIAGRAM—KEY SECTION— • Refer to page 65 for IC Block Diagrams.



Note:

- All capacitors are in μF unless otherwise noted. pF: μμF 50WV or less are not indicated except for electrolytics and tantalums.
- All resistors are in Ω and 1/4W or less unless otherwise specified.
- % : indicates tolerance.
- △ : internal component.
- ═══ : B+ Line
- Power voltage is dc 14.4V and fed with regulated dc power supply from BAT and ACC terminals.
- Voltage and waveforms are dc with respect to ground under no-signal (detuned) conditions.
  no mark : FM or PB
  ※ : Impossible to measure the voltage at the marked points.
- Voltages are taken with a VOM (Input Impedance 10MΩ). Voltage variations may be noted due to normal production tolerances.
- CND: Canadian model

5-10. PRINTED WIRING BOARD—KEY SECTION— • Refer to page 44 for Semiconductor Lead Layouts.



• **Semiconductor Location**

Ref. No.	Location
D701	E-13
D702	F-10
D703	F-14
D704	F-14
D705	F-11
D706	F-11
D707	F-11
D708	F-12
D709	F-13
D711	E-3
D712	F-2
D713	F-2
D714	F-2
D715	F-2
D716	D-2
D717	D-12
D718	J-2
D719	H-2
D720	H-2
D721	K-13
D722	K-2
D723	I-13
D724	H-13
D725	J-14
D726	I-14
D727	H-14
D728	H-11
D729	H-9
D730	H-7
D731	I-11
D732	I-11
D733	I-10
D734	I-8
D735	I-8
D736	I-7
D737	I-6
D738	I-6
D739	I-5
D740	H-6
D741	I-4
D742	H-4
IC701	K-12
IC702	E-3
IC703	E-9
IC704	F-12
Q701	E-12
Q702	E-13
Q703	E-14
Q704	E-13
Q705	E-2
Q706	D-2
Q707	D-4
Q708	D-3
Q709	F-11
Q710	F-11
Q711	F-13

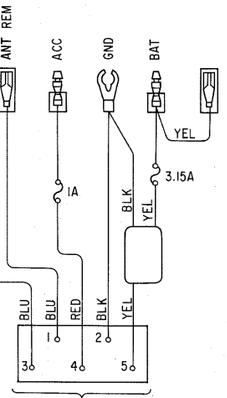
Note:

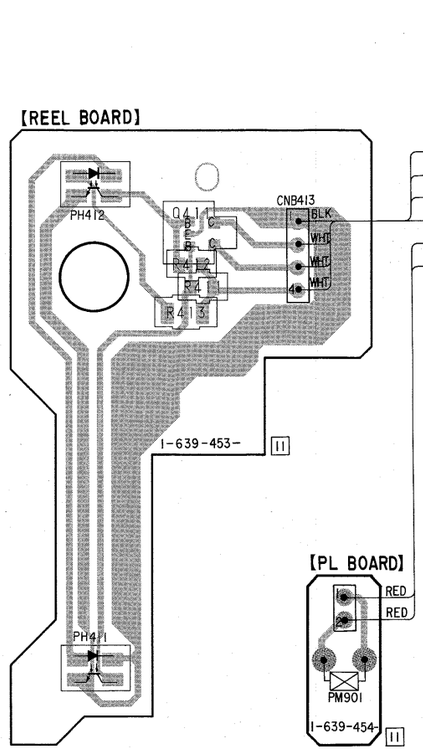
- ——— : parts extracted from the conductor side.
- ▒▒▒ : Pattern on the side which is seen.
- ▒▒▒ : Pattern of the rear side.
- CND : Canadian model

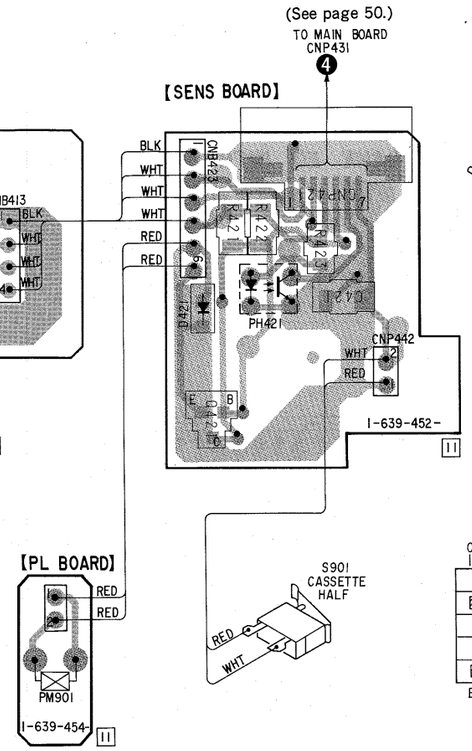
5-11. PRINTED WIRING BOARDS—MD, POWER SECTION— • Refer to page 44 for Semiconductor Lead Layouts.

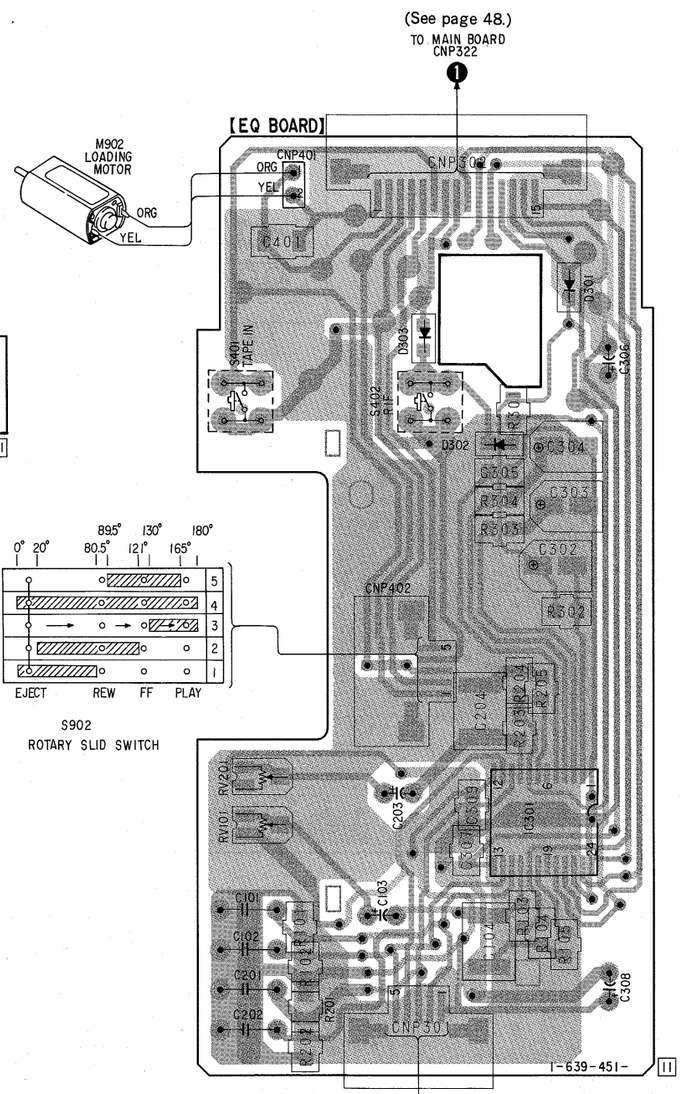
• Semiconductor Location

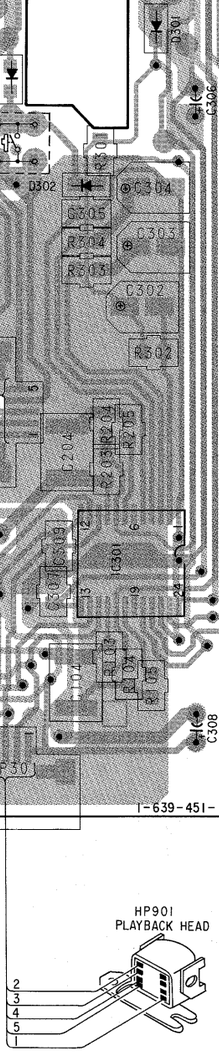
Ref. No.	Location	Ref. No.	Location
D301	C-15	PH411	E-7
D302	D-15	PH412	B-7
D303	C-14	PH421	C-10
D421	C-9		
D903	H-3	Q411	B-7
D904	I-7	Q421	C-10
IC301	F-15		



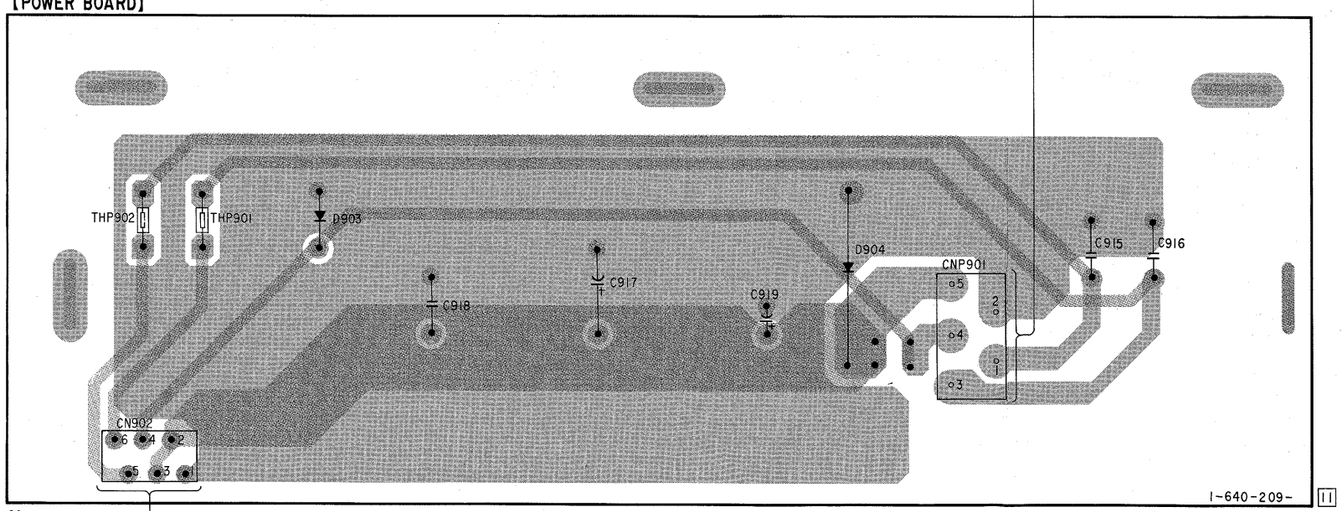




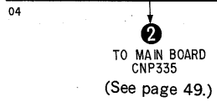




【POWER BOARD】



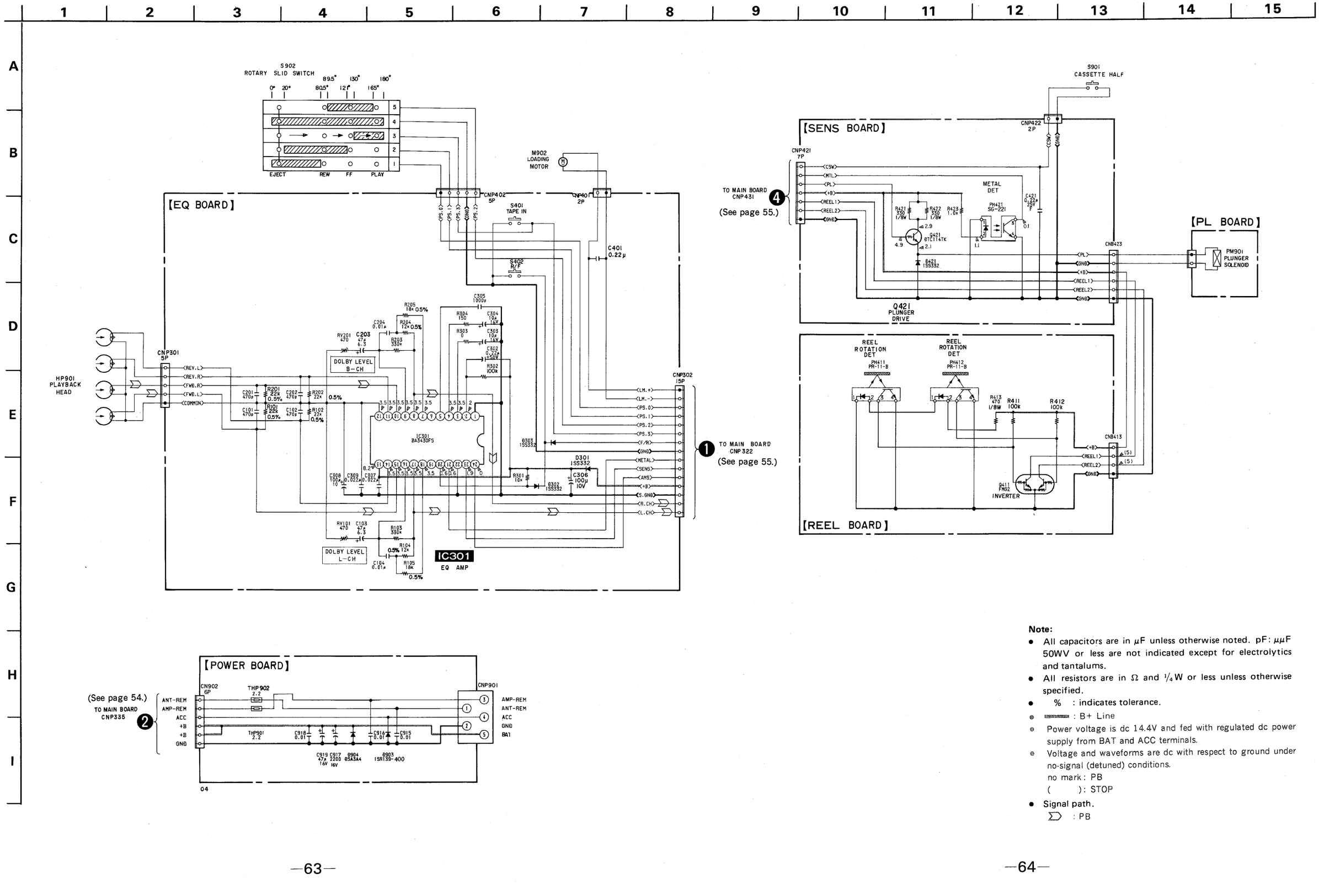
04



Note:

- ○—— : parts extracted from the component side.
- ▒▒▒ : Pattern on the side which is seen.
- ▒▒▒ : Pattern of the rear side.

5-12. SCHEMATIC DIAGRAM—MD, POWER SECTION— • Refer to page 65 for IC Block Diagrams.

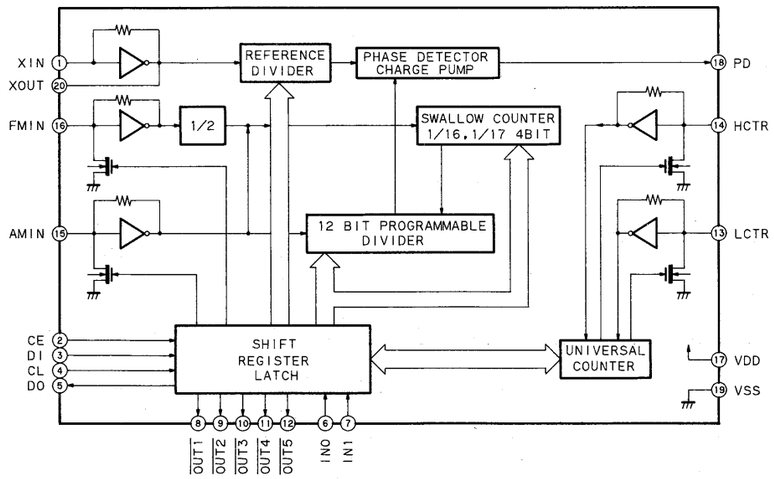


Note:

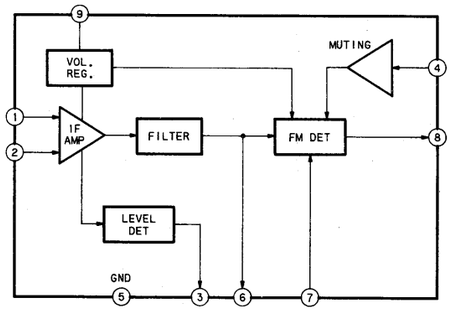
- All capacitors are in μF unless otherwise noted. pF: μμF 50WV or less are not indicated except for electrolytics and tantalums.
- All resistors are in Ω and 1/4W or less unless otherwise specified.
- % : indicates tolerance.
- ▭ : B+ Line
- Power voltage is dc 14.4V and fed with regulated dc power supply from BAT and ACC terminals.
- Voltage and waveforms are dc with respect to ground under no-signal (detuned) conditions.
  no mark : PB
  ( ) : STOP
- Signal path.
  ▷ : PB

5-13. IC BLOCK DIAGRAMS

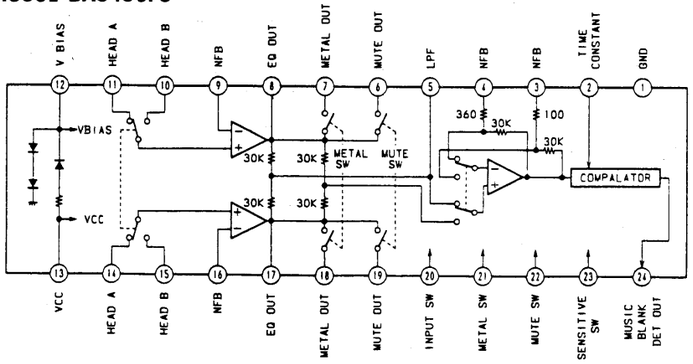
IC1 LC7216M



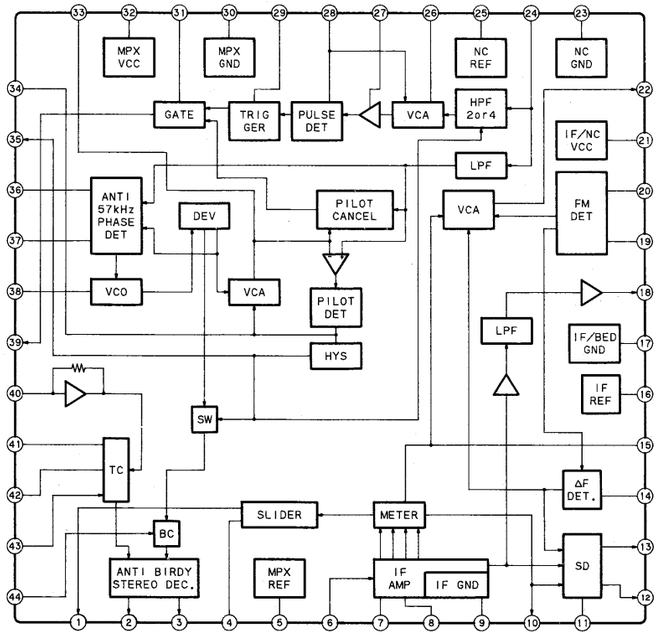
IC20 TA7303P



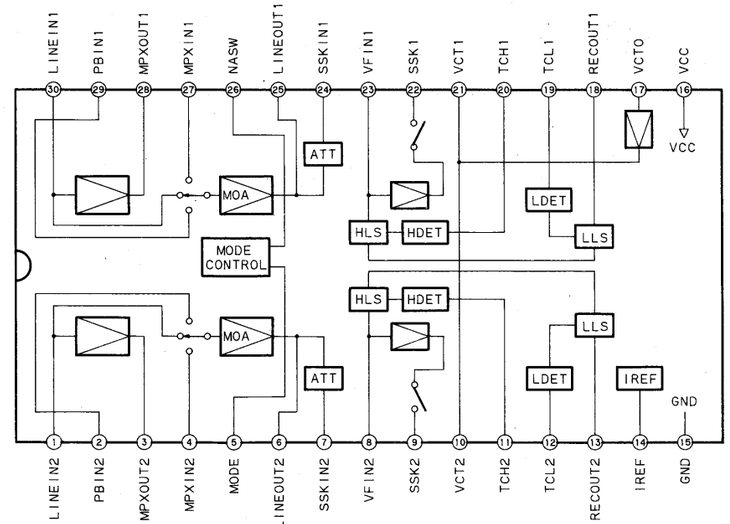
IC301 BA3430FS



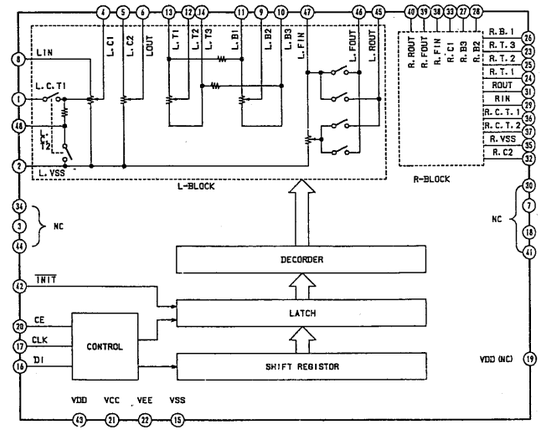
IC60 TA8172AF



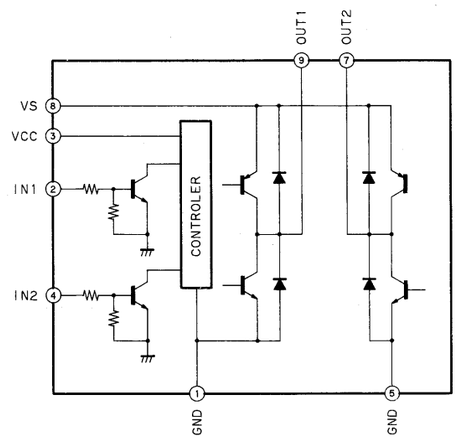
IC311 CXA1322M



IC321 LC7537AN



IC431, 505 LB1638

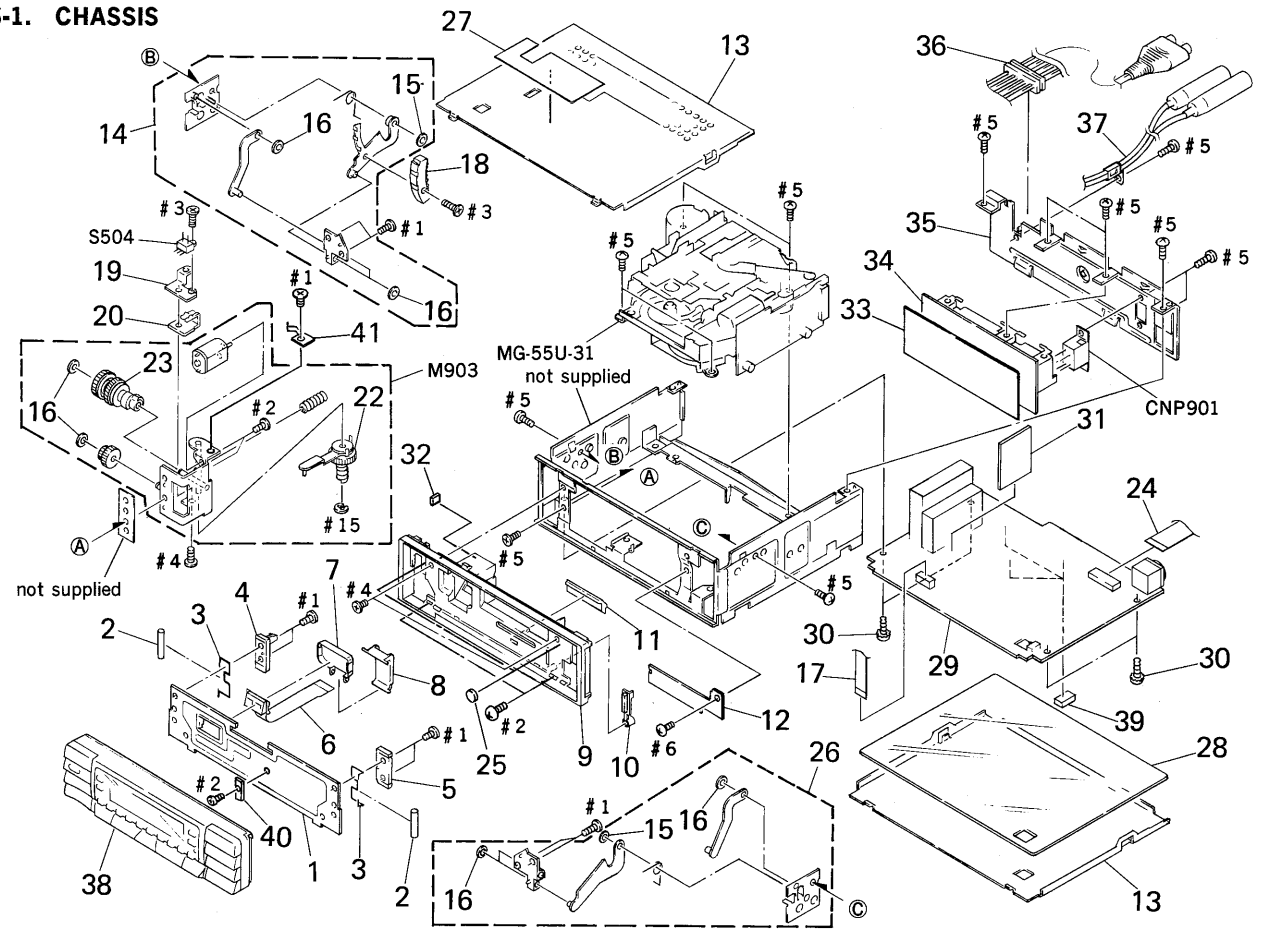


SECTION 6
EXPLODED VIEWS

NOTE:

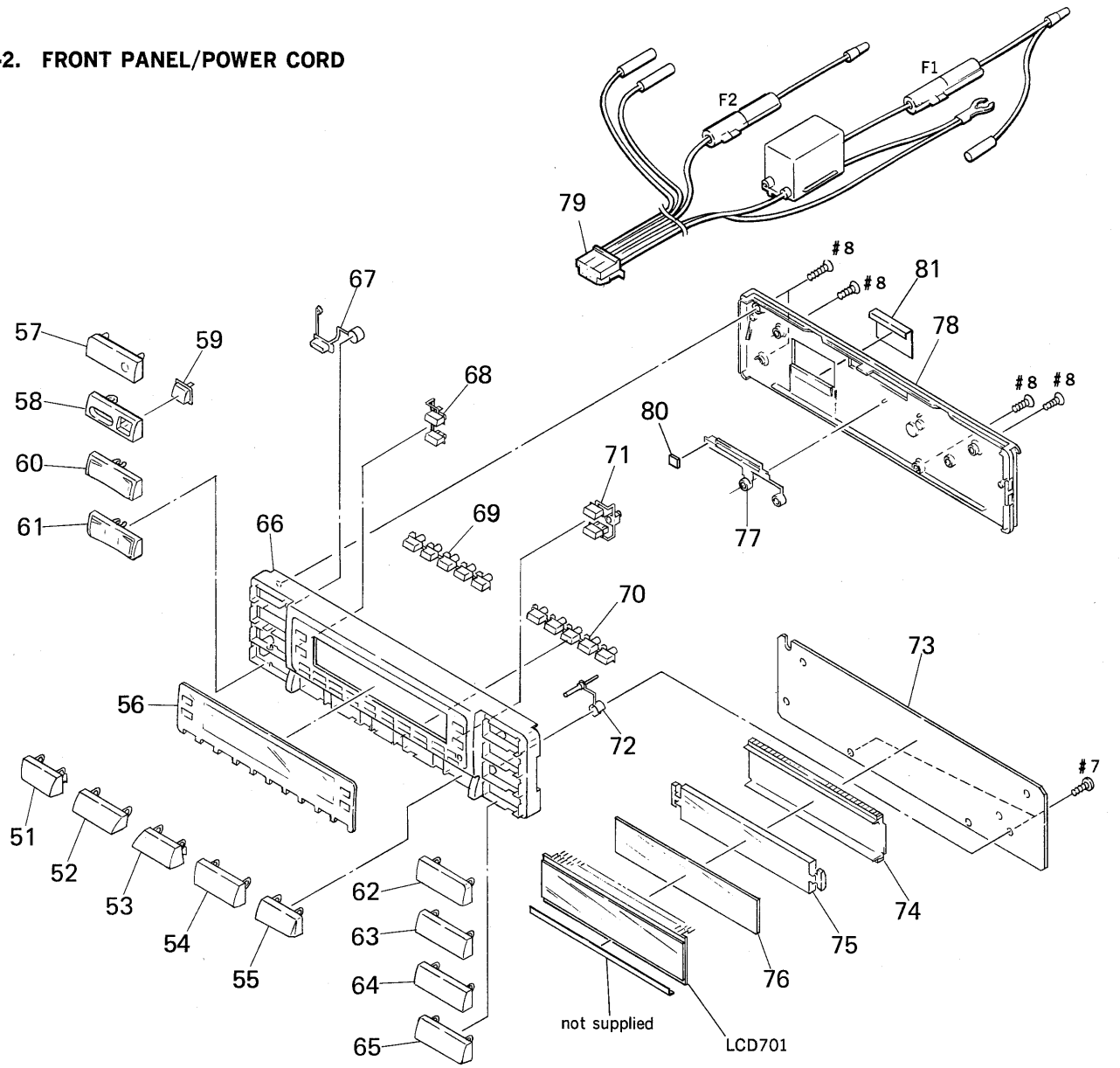
- The mechanical parts with no reference number in the exploded views are not supplied.
- Items marked "*" are not stocked since they are seldom required for routine service. Some delay should be anticipated when ordering these items.
- -XX, -X mean standardized parts, so they may have some differences from the original one.
- Color Indication of Appearance Parts
  Example:
  KNOB, BALANCE (WHITE)...(RED)
  ↑ Parts Color ↑ Cabinet's Color
- Hardware(# mark) list is given in the last of this parts list.

6-1. CHASSIS



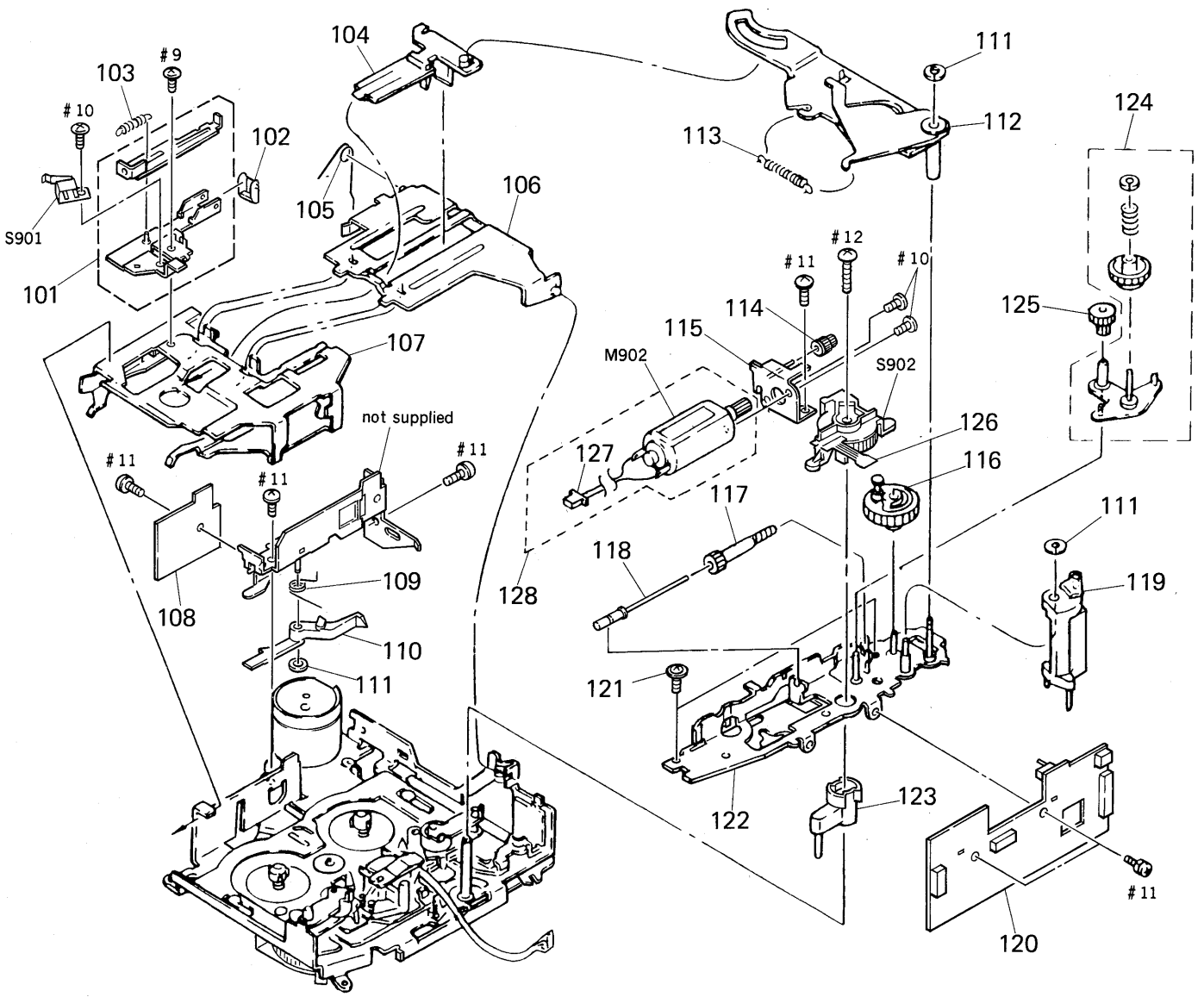
Ref. No.	Part No.	Description	Remark
1	* 3-367-517-12	BRACKET (F. P)	
2	* 3-367-493-01	ROLLER	
3	* 3-367-492-01	SPRING (ROLLER)	
4	* 3-367-491-01	COVER (ROLLER L)	
5	* 3-367-475-01	COVER (ROLLER R)	
6	1-573-539-11	CONNECTOR (WITH F. P. C)	
7	3-367-489-01	COVER (FLEXIBLE)	
8	3-367-488-01	COVER (CONNECTOR)	
9	* 3-367-523-01	PANEL, SUB	
10	3-367-494-01	BUTTON (RESET)	
11	* 3-367-495-01	PLATE (SUB PANEL), LIGHT GUIDE	
12	* 1-640-205-11	RESET BOARD	
13	* 3-367-525-01	COVER	
14	X-3362-827-1	LINK ASSY (L)	
15	3-321-813-01	WASHER, COTTER POLYETHYLENE	
16	3-325-290-21	WASHER, STOPPER	
17	1-690-264-11	CORD, CONNECTION (7 CORE FLAT)	
18	3-367-516-01	GEAR (3)	
19	* 3-367-501-01	BRACKET (SWITCH)	
20	* 3-367-513-01	COVER (SWITCH)	
22	X-3363-338-1	GEAR (WORM 2) ASSY	
23	X-3362-836-1	CLUTCH ASSY	
24	1-690-021-11	CORD, CONNECTION (15 CORE)	
25	* 3-371-159-01	CUSHION (2)	
26	X-3362-831-1	LINK ASSY (R)	
27	* 3-369-236-01	LABEL, MODEL NUMBER (CA) (Canadian)	
27	* 3-369-237-01	LABEL, MODEL NUMBER (U) (US)	
27	* 3-369-240-01	LABEL, MODEL NUMBER (E) (E)	
28	* 3-367-588-01	INSULATOR	
29	* A-3222-297-A	MAIN BOARD, COMPLETE (US, Canadian)	
29	* A-3222-298-A	MAIN BOARD, COMPLETE (E)	
30	3-344-501-11	SCREW (+ PTT 3X8), GROUND POINT	
31	* A-3273-449-A	DIVER BOARD, COMPLETE	
32	9-911-839-XX	SPACER	
33	9-911-863-XX	INSULATOR (POWER PC BOARD)	
34	* 1-640-209-11	POWER BOARD	
35	* 3-367-522-01	PANEL, BACK	
36	1-590-511-11	CORD (WITH CONNECTOR) (ANT)	
37	1-590-525-11	CORD (WITH CONNECTOR)	
38	* A-3252-224-A	PANEL ASSY, FRONT (US, Canadian)	
38	* A-3252-225-A	PANEL ASSY, FRONT (E)	
39	9-911-841-XX	CUSHION, CASSETTE LID	
40	* 3-371-056-01	GUIDE	
41	3-371-553-01	SPRING (LOCK)	
CN901	* 1-573-384-11	CONNECTOR	
M903	X-3362-835-1	MOTOR BLOCK ASSY	
S504	1-570-883-11	SWITCH, PUSH (2 KEY) (DPO/DPI)	

6-2. FRONT PANEL/POWER CORD



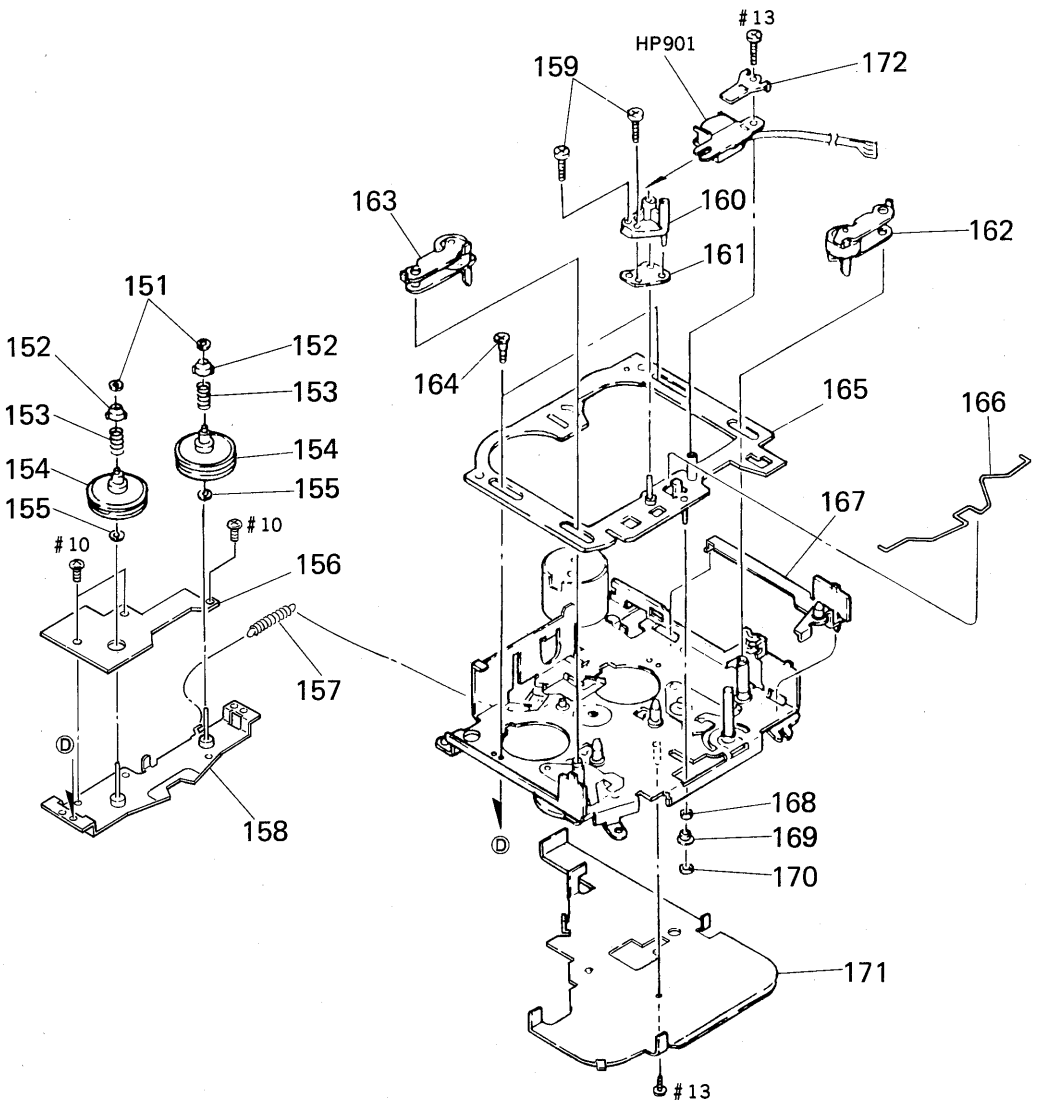
Ref. No.	Part No.	Description	Remark
51	3-367-562-01	BUTTON (MUTE)	
52	3-367-561-01	BUTTON (-)	
53	3-367-560-01	BUTTON (SELECT)	
54	3-367-559-01	BUTTON (+)	
55	3-367-558-01	BUTTON (LOUD)	
56	3-367-554-21	PLATE, INDICATION (E)	
56	3-367-554-41	PLATE, INDICATION (US, Canadian)	
57	3-367-563-01	BUTTON (LU)	
58	3-367-570-01	COVER (RAY CATCHER)	
59	3-367-567-01	FILTER (RAY CATCHER)	
60	3-367-565-01	BUTTON (SEEK)	
61	3-367-566-01	BUTTON (MANU)	
62	3-367-555-01	BUTTON (RU) (US, Canadian)	
62	3-367-555-31	BUTTON (RU) (E)	
63	3-367-556-01	BUTTON (RM) (US, Canadian)	
63	3-367-556-31	BUTTON (RM) (E)	
64	3-367-556-21	BUTTON (RM)	
65	3-367-557-01	BUTTON (RD)	
66	3-367-553-01	PANEL, FRONT	
67	3-367-564-01	BUTTON (OFF)	
68	3-367-568-01	BUTTON (2 GANG L)	
69	3-367-572-01	BUTTON (PRESET/5)	
70	3-367-572-11	BUTTON (PRESET/5)	
71	3-367-569-01	BUTTON (2 GANG R)	
72	3-367-574-01	BUTTON (RESET)	
73	* A-3222-252-A	KEY BOARD, COMPLETE (E)	
73	* A-3222-295-A	KEY BOARD, COMPLETE (US, Canadian)	
74	* 3-367-571-01	HOLDER (LCD)	
75	* 3-367-573-01	PLATE (LCD), LIGHT GUIDE	
76	* 3-368-252-01	SHEET (REFLECTOR)	
77	* 3-367-474-01	BUTTON (LOCK)	
78	3-367-526-01	PANEL, FRONT BACK	
79	1-590-522-11	CORD (WITH CONNECTOR) (5P) (US, Canadian)	
79	1-590-522-21	CORD (WITH CONNECTOR) (5P) (E)	
80	* 3-370-594-01	CUSHION	
81	* 3-372-364-01	SHEET (SLIP)	
F1	1-532-575-XX	FUSE 3.15A	
F2	1-532-452-XX	FUSE 1A	
LCD701	1-809-286-11	DISPLAY PANEL, LIQUID CRYSTAL	

6-3. MECHANISM DECK BLOCK (1)



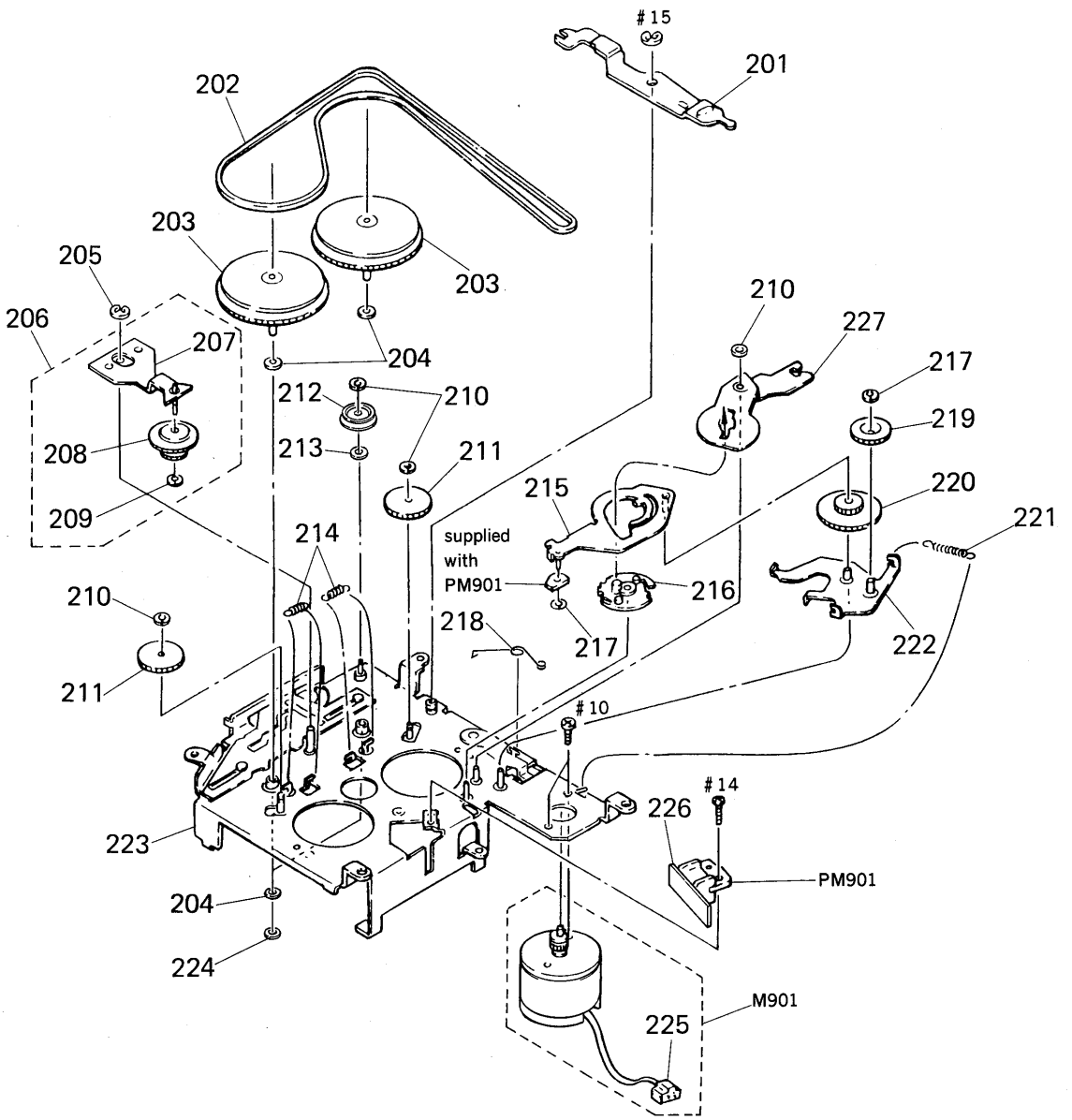
Ref. No.	Part No.	Description	Remark
101	X-3362-992-1	BRACKET ASSY, SWITCH	
102	3-368-235-01	LEVER, CASSETTE DETECTION	
103	3-542-475-00	SPRING, TENSION	
104	* 3-344-118-01	CATCHER	
105	3-344-113-03	SPRING	
106	* X-3362-262-1	HANGER (F) ASSY, HOUSING	
107	* 3-344-103-21	HOUSING, CASSETTE	
108	* 1-639-452-11	SENS BOARD	
109	3-344-285-01	SPRING (F), TS	
110	3-368-237-01	ARM (U), TS	
111	3-344-222-01	WASHER	
112	* X-3344-121-1	ARM ASSY, SUCTION	
113	3-344-216-01	SPRING (SUCTION ARM), TENSION	
114	3-344-281-01	GEAR (A), DRIVING	
115	* X-3344-142-2	BRACKET (F) ASSY, MOTOR	
116	X-3344-119-1	GEAR ASSY, LOADING CAM	
117	3-344-156-01	GEAR (B), DRIVING	
118	* 3-344-157-01	SHAFT, DRIVING GEAR (B)	
119	* 3-344-260-01	ARM, REVERSE	
120	* A-3222-258-A	EQ BOARD, COMPLETE	
121	3-703-502-21	SCREW	
122	* X-3362-260-3	CHASSIS (F) ASSY, MCU	
123	X-3344-117-1	ARM ASSY, MODE	
124	A-3239-954-A	GEAR ASSY, DRIVING ARM	
125	3-344-108-01	GEAR (A), FRICTION	
126	1-635-519-12	PC BOARD, FLEXIBLE	
127	* 1-563-470-11	HOUSING, CONNECTOR 2P	
128	A-3252-174-A	MOTOR SUB ASSY (U), L	
M902	X-3362-826-1	GEAR ASSY, MOTOR	
S901	1-572-765-11	SWITCH, MICRO (CASSETTE HALF)	
S902	1-572-397-11	SWITCH, ROTARY SLIDE	

6-4. MECHANISM DECK BLOCK (2)



Ref. No.	Part No.	Description	Remark
151	3-364-151-01	WASHER	
152	3-365-725-01	CAP (F), REEL	
153	3-344-143-01	SPRING (BT), COMPRESSION	
154	X-3362-214-1	TABLE (F) ASSY, REEL	
155	3-701-437-01	POLY-SLIDER (A)	
156	* 1-639-453-11	REEL BOARD	
157	3-344-217-01	SPRING(CAM LOCK LEVER), TENTION	
158	* X-3344-144-2	BRACKET (F) ASSY, REEL TABLE	
159	3-364-122-01	SCREW (M1.4X5.5), ADJ	
160	3-372-170-01	ARM, DAH	
161	3-344-128-01	SEAM, DAH	
162	X-3344-116-1	ARM (F) ASSY, PINCH	
163	X-3344-115-1	ARM (R) ASSY, PINCH	
164	3-344-110-01	SCREW (HB), STEP	
165	X-3362-261-1	BASE ASSY (R), HEAD	
166	* 3-363-909-01	SPRING (R), PINCH PRESS	
167	* X-3344-118-1	LEVER ASSY, RVS CONVERSION	
168	3-344-117-01	ROLLER (B), H/B	
169	3-344-116-01	ROLLER (A), H/B	
170	3-344-222-01	WASHER	
171	* 3-344-220-01	COVER, MD	
172	3-344-130-01	RETAINER, HEAD	
HP901	1-543-800-21	HEAD, MAGNETIC (PLAYBACK)	

6-5. MECHANISM DECK BLOCK (3)



Ref. No.	Part No.	Description	Remark
201	* X-3344-139-1	ARM ASSY, POWER	
202	3-344-115-01	BELT	
203	3-344-261-01	FLYWHEEL (M)	
204	3-701-437-01	POLY-SLIDER (A)	
205	3-590-768-00	RING (A), E	
206	A-3239-947-A	GEAR SUB ASSY, FR	
207	* X-3344-101-1	ARM ASSY, FR	
208	X-3344-102-1	GEAR ASSY, FR	
209	3-344-224-01	WASHER	
210	3-344-222-01	WASHER	
211	3-344-104-01	GEAR, PLAY	
212	3-371-905-01	PULLEY (M), MIDWAY	
213	3-701-436-01	WASHER, 1.6	
214	3-344-218-02	SPRING (PLAY ARM), TENSION	
215	X-3344-107-1	LEVER ASSY, CAM LOCK	
216	3-344-119-01	GEAR, RVS CAM	
217	3-344-223-01	WASHER	
218	3-344-279-01	SPRING, BUFFER	
219	3-344-147-01	GEAR (A), RVS	
220	3-344-146-01	GEAR (B), RVS	
221	3-344-215-01	SPRING, TENSION	
222	* X-3344-106-1	LEVER ASSY, RVS GEAR (B)	
223	* X-3362-215-6	CHASSIS (L) ASSY, MECHANICAL	
224	3-364-151-01	WASHER	
225	* 1-563-470-11	HOUSING, CONNECTOR 2P	
226	1-639-454-11	PL BOARD	
227	* X-3344-114-1	LEVER ASSY, RVS	
M901	X-3344-136-3	CAPSTAN MOTOR SUB ASSY	
PM901	1-454-461-11	SOLENOID, PLUNGER	

EQ

SECTION 7
ELECTRICAL PARTS LIST

NOTE:

- Due to standardization, replacements in the parts list may be different from the parts specified in the diagrams or the components used on the set.
- Items marked "*" are not stocked since they are seldom required for routine service. Some delay should be anticipated when ordering these items.
- -XX, -X mean standardized parts, so they may have some differences from the original one.
- CAPACITORS
  uF: μF
- RESISTORS
  All resistors are in ohms
  METAL: Metal-film resistor
  METAL OXIDE: Metal Oxide-film resistor
  F: nonflammable
- COILS
  uH: μH
- SEMICONDUCTORS
  In each case, u: μ, for example:
  uA...: μA..., uPA...: μPA...,
  uPB...: μPB..., uPC...: μPC...,
  uPD...: μPD....

When indicating parts by reference number, please include the board name.

Ref. No.	Part No.	Description			Remark
*	A-3222-258-A	EQ BOARD, COMPLETE			
		**********			
		< CAPACITOR >			
C101	1-130-467-00	MYLAR	470PF	5%	50V
C102	1-130-467-00	MYLAR	470PF	5%	50V
C103	1-126-285-11	ELECT	47uF	20%	6.3V
C104	1-137-338-11	FILM CHIP	0.01uF	5%	250V
C201	1-130-467-00	MYLAR	470PF	5%	50V
C202	1-130-467-00	MYLAR	470PF	5%	50V
C203	1-126-285-11	ELECT	47uF	20%	6.3V
C204	1-137-338-11	FILM CHIP	0.01uF	5%	250V
C302	1-126-189-11	ELECT	0.22uF	20%	50V
C303	1-124-779-00	ELECT CHIP	10uF	20%	16V
C304	1-124-779-00	ELECT CHIP	10uF	20%	16V
C305	1-163-009-11	CERAMIC CHIP	0.001uF	10%	50V
C306	1-126-277-11	ELECT	100uF	20%	10V
C307	1-163-037-11	CERAMIC CHIP	0.022uF	10%	25V
C308	1-126-277-11	ELECT	100uF	20%	10V
C309	1-163-037-11	CERAMIC CHIP	0.022uF	10%	25V
C401	1-163-081-00	CERAMIC CHIP	0.22uF		25V
		< CONNECTOR >			
CNP301	1-569-806-21	CONNECTOR, FPC5P			
CNP302	1-569-363-21	CONNECTOR, FPC 15P			
CNP401 *	1-506-998-11	PIN, CONNECTOR (PC BOARD) 2P			
CNP402	1-569-806-21	CONNECTOR, FPC5P			
		< DIODE >			
D301	8-719-976-31	DIODE	1SS332		
D302	8-719-976-31	DIODE	1SS332		
D303	8-719-976-31	DIODE	1SS332		

Ref. No.	Part No.	Description				Remark
		< IC >				
IC301	8-759-988-33	IC BA3430FS				
		< RESISTOR >				
R101	1-216-683-11	METAL CHIP	22K	0.5%	1/10W	
R102	1-216-683-11	METAL CHIP	22K	0.5%	1/10W	
R103	1-216-109-00	METAL CHIP	330K	5%	1/10W	
R104	1-216-677-11	METAL CHIP	12K	0.5%	1/10W	
R105	1-216-681-11	METAL CHIP	18K	0.5%	1/10W	
R201	1-216-683-11	METAL CHIP	22K	0.5%	1/10W	
R202	1-216-683-11	METAL CHIP	22K	0.5%	1/10W	
R203	1-216-109-00	METAL CHIP	330K	5%	1/10W	
R204	1-216-677-11	METAL CHIP	12K	0.5%	1/10W	
R205	1-216-681-11	METAL CHIP	18K	0.5%	1/10W	
R301	1-216-073-00	METAL CHIP	10K	5%	1/10W	
R302	1-216-097-00	METAL CHIP	100K	5%	1/10W	
R303	1-216-295-00	METAL CHIP	0	5%	1/10W	
R304	1-216-029-00	METAL CHIP	150	5%	1/10W	
		< VARIABLE RESISTOR >				
RV101	1-241-552-11	RES, ADJ CERMET 470				
RV201	1-241-552-11	RES, ADJ CERMET 470				
		< SWITCH >				
S401	1-570-953-11	SWITCH, PUSH (1 KEY)				(TAPE IN)
S402	1-570-953-11	SWITCH, PUSH (1 KEY)				(R/F)

****

Ref. No.	Part No.	Description			Remark
	* A-3222-295-A	KEY BOARD, COMPLETE (US, Canadian)			
		**********			
	* A-3222-252-A	KEY BOARD, COMPLETE (E)			
		**********			
	* 3-367-571-01	HOLDER (LCD)			
	* 3-367-573-01	PLATE (LCD), LIGHT GUIDE			
	* 3-368-252-01	SHEET (REFLECTOR)			
		< CAPACITOR >			
C701	1-164-222-11	CERAMIC CHIP	0.22uF		25V
C702	1-163-141-00	CERAMIC CHIP	0.001uF	5%	50V
C704	1-164-232-11	CERAMIC CHIP	0.01uF		50V
C705	1-163-037-11	CERAMIC CHIP	0.022uF	10%	25V
C706	1-135-149-21	TANTALUM CHIP	2.2uF	20%	10V
C707	1-164-222-11	CERAMIC CHIP	0.22uF		25V
C708	1-164-232-11	CERAMIC CHIP	0.01uF		50V
		< CONNECTOR >			
CNP701	1-580-806-11	CONNECTOR, PLUG 10P			
		< DIODE >			
D701	8-719-977-00	DIODE	DTZ5.1C		
D702	8-719-977-07	DIODE	DTZ6.2B		
D703	8-719-976-31	DIODE	1SS332		
D704	8-719-976-31	DIODE	1SS332		
D705	8-719-976-31	DIODE	1SS332		
D706	8-719-977-07	DIODE	DTZ6.2B		
D707	8-719-977-07	DIODE	DTZ6.2B		
D708	8-719-977-07	DIODE	DTZ6.2B		
D709	8-719-976-31	DIODE	1SS332		
D711	8-719-976-31	DIODE	1SS332		
D712	8-719-976-31	DIODE	1SS332		
D713	8-719-976-31	DIODE	1SS332		
D714	8-719-976-31	DIODE	1SS332		
D715	8-719-976-31	DIODE	1SS332		
D716	8-719-976-31	DIODE	1SS332		
D717	8-719-977-00	DIODE	DTZ5.1C		
D718	8-719-987-45	DIODE	CL-155Y/PG-CD		
D719	8-719-987-45	DIODE	CL-155Y/PG-CD		
D720	8-719-987-45	DIODE	CL-155Y/PG-CD		
D721	8-719-987-45	DIODE	CL-155Y/PG-CD		
D722	8-719-987-45	DIODE	CL-155Y/PG-CD		
D723	8-719-987-45	DIODE	CL-155Y/PG-CD		
D724	8-719-987-45	DIODE	CL-155Y/PG-CD		
D725	8-719-987-45	DIODE	CL-155Y/PG-CD		
D726	8-719-987-45	DIODE	CL-155Y/PG-CD		
D727	8-719-987-45	DIODE	CL-155Y/PG-CD		
D728	8-719-987-45	DIODE	CL-155Y/PG-CD		
D729	8-719-987-45	DIODE	CL-155Y/PG-CD		
D730	8-719-987-45	DIODE	CL-155Y/PG-CD		
D731	8-719-987-45	DIODE	CL-155Y/PG-CD		
D732	8-719-987-45	DIODE	CL-155Y/PG-CD		
D733	8-719-987-45	DIODE	CL-155Y/PG-CD		
D734	8-719-987-45	DIODE	CL-155Y/PG-CD		
D735	8-719-987-45	DIODE	CL-155Y/PG-CD		
D736	8-719-987-45	DIODE	CL-155Y/PG-CD		
D737	8-719-987-45	DIODE	CL-155Y/PG-CD		
D738	8-719-987-45	DIODE	CL-155Y/PG-CD		
D739	8-719-987-45	DIODE	CL-155Y/PG-CD		
D740	8-719-987-45	DIODE	CL-155Y/PG-CD		
D741	8-719-987-45	DIODE	CL-155Y/PG-CD		
D742	8-719-987-45	DIODE	CL-155Y/PG-CD		
		< IC >			
IC701	8-759-515-60	IC	RS-20		
IC702	8-759-154-94	IC	UPD75008GB-632-3B4		
IC703	8-759-246-16	IC	TC9240F		
IC704	8-759-981-65	IC	LM2903M		
		< JUMPER >			
JR733	1-216-295-00	METAL CHIP	0	5%	1/10W (US, Canadian)
		< COIL >			
L701	1-410-204-31	INDUCTOR CHIP	10uH		
		< LCD >			
LCD701	1-809-286-11	DISPLAY PANEL, LIQUID CRYSTAL			
		< PILOT LAMP >			
PL701	1-518-678-21	LAMP, PILOT			
PL702	1-518-678-21	LAMP, PILOT			
PL703	1-518-677-21	LAMP, PILOT			
PL704	1-518-677-21	LAMP, PILOT			
		< TRANSISTOR >			
Q701	8-729-904-57	TRANSISTOR	DTB114EK		
Q702	8-729-900-53	TRANSISTOR	DTC114EK		
Q703	8-729-904-57	TRANSISTOR	DTB114EK		
Q704	8-729-900-53	TRANSISTOR	DTC114EK		
Q705	8-729-904-66	TRANSISTOR	DTD113EK		
Q706	8-729-904-66	TRANSISTOR	DTD113EK		
Q707	8-729-904-66	TRANSISTOR	DTD113EK		
Q708	8-729-904-66	TRANSISTOR	DTD113EK		
Q709	8-729-901-05	TRANSISTOR	DTA124EK		
Q710	8-729-120-28	TRANSISTOR	2SC1623-L5L6		
Q711	8-729-120-28	TRANSISTOR	2SC1623-L5L6		

KEY MAIN DIVER

Ref. No.	Part No.	Description			Remark
		< RESISTOR >			
R701	1-216-049-00	METAL CHIP	1K	5%	1/10W
R702	1-216-025-00	METAL CHIP	100	5%	1/10W
R703	1-216-089-00	METAL CHIP	47K	5%	1/10W
R704	1-216-081-00	METAL CHIP	22K	5%	1/10W
R705	1-216-065-00	METAL CHIP	4.7K	5%	1/10W
R706	1-216-065-00	METAL CHIP	4.7K	5%	1/10W
R707	1-216-073-00	METAL CHIP	10K	5%	1/10W
R708	1-216-105-00	METAL CHIP	220K	5%	1/10W
R709	1-216-105-00	METAL CHIP	220K	5%	1/10W
R710	1-216-089-00	METAL CHIP	47K	5%	1/10W
R711	1-216-089-00	METAL CHIP	47K	5%	1/10W
R712	1-216-081-00	METAL CHIP	22K	5%	1/10W
R713	1-216-073-00	METAL CHIP	10K	5%	1/10W
R714	1-216-063-00	METAL CHIP	3.9K	5%	1/10W
R715	1-216-041-00	METAL CHIP	470	5%	1/10W
R716	1-216-097-00	METAL CHIP	100K	5%	1/10W
R717	1-216-089-00	METAL CHIP	47K	5%	1/10W
R718	1-216-049-00	METAL CHIP	1K	5%	1/10W
R719	1-216-049-00	METAL CHIP	1K	5%	1/10W
R720	1-216-049-00	METAL CHIP	1K	5%	1/10W
R721	1-216-049-00	METAL CHIP	1K	5%	1/10W
R722	1-216-182-00	METAL GLAZE	220	5%	1/8W
R723	1-216-186-00	METAL GLAZE	330	5%	1/8W
R724	1-216-186-00	METAL GLAZE	330	5%	1/8W
R725	1-216-033-00	METAL CHIP	220	5%	1/10W
R726	1-216-033-00	METAL CHIP	220	5%	1/10W
R727	1-216-033-00	METAL CHIP	220	5%	1/10W
R728	1-216-033-00	METAL CHIP	220	5%	1/10W
R729	1-216-033-00	METAL CHIP	220	5%	1/10W
R730	1-216-033-00	METAL CHIP	220	5%	1/10W
R734	1-216-089-00	METAL CHIP	47K	5%	1/10W (E)
		< SWITCH >			
S701	1-572-768-11	SWITCH, KEY BOARD (CD)			
S702	1-572-768-11	SWITCH, KEY BOARD (MUTE)			
S703	1-572-768-11	SWITCH, KEY BOARD (SELECT)			
S704	1-572-768-11	SWITCH, KEY BOARD (MANU+/DISC FF)			
S705	1-572-768-11	SWITCH, KEY BOARD (MANU-/DISC REW)			
S706	1-572-768-11	SWITCH, KEY BOARD (+)			
S707	1-572-768-11	SWITCH, KEY BOARD (-)			
S708	1-572-768-11	SWITCH, KEY BOARD (LOUD)			
S709	1-572-768-11	SWITCH, KEY BOARD (TAPE ◀II▶)			
S710	1-572-768-11	SWITCH, KEY BOARD (INTRO/1)			
S711	1-572-768-11	SWITCH, KEY BOARD (BANK/3)			
S712	1-572-768-11	SWITCH, KEY BOARD (SEEK+/AMS ⏮)			
S713	1-572-768-11	SWITCH, KEY BOARD (SEEK-/AMS ⏭)			
S714	1-572-768-11	SWITCH, KEY BOARD (REPEAT/2)			
S715	1-572-768-11	SWITCH, KEY BOARD (0)			
S716	1-572-768-11	SWITCH, KEY BOARD (TV/VIDEO) (US, Canadian)			
S716	1-572-768-11	SWITCH, KEY BOARD (AM) (E)			
S717	1-572-768-11	SWITCH, KEY BOARD (7)			
S718	1-572-768-11	SWITCH, KEY BOARD (8)			
S719	1-572-768-11	SWITCH, KEY BOARD (M. SCAN/BTM)			
S720	1-572-768-11	SWITCH, KEY BOARD (DSPL)			
S721	1-572-768-11	SWITCH, KEY BOARD (9)			
S722	1-572-768-11	SWITCH, KEY BOARD (□□FILE)			
S723	1-572-768-11	SWITCH, KEY BOARD (FM/AM) (US, Canadian)			
S723	1-572-768-11	SWITCH, KEY BOARD (FM) (E)			
S724	1-572-768-11	SWITCH, KEY BOARD (BL. SKIP/6)			
S725	1-572-768-11	SWITCH, KEY BOARD (ATA/5)			
S726	1-572-768-11	SWITCH, KEY BOARD (OFF)			
S727	1-572-768-11	SWITCH, KEY BOARD (OPEN ⏏)			
S728	1-572-768-11	SWITCH, KEY BOARD (SHUF/4)			
S729	1-572-768-11	SWITCH, KEY BOARD (SENS)			
		< VIBRATOR >			
X701	1-567-775-11	VIBRATOR, CERAMIC (4.9MHz)			
		**********			
	* A-3222-297-A	MAIN BOARD, COMPLETE (US, Canadian)			
		**********			
	* A-3222-298-A	MAIN BOARD, COMPLETE (E)			
		**********			
	* A-3273-449-A	DIVER BOARD, COMPLETE			
		**********			
	1-690-021-11	CORD, CONNECTION (15 CORE)			
	1-690-264-11	CORD, CONNECTION (7 CORE FLAT)			
		< CAPACITOR >			
C2	1-164-232-11	CERAMIC CHIP	0.01uF		50V
C3	1-136-162-00	FILM	0.056uF	5%	50V
C4	1-163-237-11	CERAMIC CHIP	27PF	5%	50V
C5	1-163-237-11	CERAMIC CHIP	27PF	5%	50V
C6	1-163-038-00	CERAMIC CHIP	0.1uF		25V
C7	1-136-169-00	FILM	0.22uF	5%	50V
C8	1-130-479-00	MYLAR	0.0047uF	5%	50V
C9	1-163-038-00	CERAMIC CHIP	0.1uF		25V
C10	1-164-232-11	CERAMIC CHIP	0.01uF		50V
C11	1-164-232-11	CERAMIC CHIP	0.01uF		50V
C12	1-163-809-11	CERAMIC CHIP	0.047uF	10%	25V
C13	1-164-182-11	CERAMIC CHIP	0.0033uF	10%	50V
C14	1-163-833-00	CERAMIC CHIP	0.068uF		25V
C15	1-163-038-00	CERAMIC CHIP	0.1uF		25V

Ref. No.	Part No.	Description		Remark	
C16	1-124-499-11	ELECT, NONPOLAR	1uF	20%	50V
C17	1-163-038-00	CERAMIC CHIP	0.1uF		25V
C18	1-163-833-00	CERAMIC CHIP	0.068uF	10%	25V
C19	1-164-232-11	CERAMIC CHIP	0.01uF		50V
C20	1-164-232-11	CERAMIC CHIP	0.01uF		50V
C21	1-164-232-11	CERAMIC CHIP	0.01uF		50V
C22	1-163-809-11	CERAMIC CHIP	0.047uF	10%	25V
C23	1-164-182-11	CERAMIC CHIP	0.0033uF	10%	50V
C24	1-163-833-00	CERAMIC CHIP	0.068uF		25V
C25	1-163-038-00	CERAMIC CHIP	0.1uF		25V
C26	1-124-499-11	ELECT, NONPOLAR	1uF	20%	50V
C27	1-163-038-00	CERAMIC CHIP	0.1uF		25V
C28	1-163-833-00	CERAMIC CHIP	0.068uF	10%	25V
C29	1-164-232-11	CERAMIC CHIP	0.01uF		50V
C30	1-164-232-11	CERAMIC CHIP	0.01uF		50V
C31	1-163-097-00	CERAMIC CHIP	15PF	5%	50V
C32	1-164-232-11	CERAMIC CHIP	0.01uF		50V
C33	1-163-251-11	CERAMIC CHIP	100PF	5%	50V
C34	1-164-232-11	CERAMIC CHIP	0.01uF		50V
C35	1-164-232-11	CERAMIC CHIP	0.01uF		50V
C36	1-164-006-11	CERAMIC CHIP	0.33uF	10%	16V
C37	1-163-251-11	CERAMIC CHIP	100PF	5%	50V
C38	1-163-251-11	CERAMIC CHIP	100PF	5%	50V
C39	1-163-251-11	CERAMIC CHIP	100uF	5%	50V
C42	1-163-097-00	CERAMIC CHIP	15PF	5%	50V
C64	1-135-177-21	TANTALUM CHIP	1uF	20%	20V
C65	1-135-177-21	TANTALUM CHIP	1uF	20%	20V
C66	1-163-077-00	CERAMIC CHIP	0.1uF	10%	25V
C67	1-126-294-11	ELECT	4.7uF	20%	35V
C68	1-110-351-11	MYLAR	0.001uF	5%	50V
C69	1-164-006-11	CERAMIC CHIP	0.33uF	10%	16V
C70	1-164-343-11	CERAMIC CHIP	0.056uF	10%	25V
C71	1-128-172-11	ELECT	47uF	20%	6.3V
C72	1-124-257-00	ELECT	2.2uF	20%	50V
C73	1-136-158-00	FILM (US, Canadian)	0.027uF	5%	50V
C73	1-136-157-00	FILM (E)	0.022uF	5%	50V
C74	1-136-158-00	FILM (US, Canadian)	0.027uF	5%	50V
C74	1-136-157-00	FILM (E)	0.022uF	5%	50V
C75	1-163-077-00	CERAMIC CHIP	0.1uF	10%	25V
C76	1-163-809-11	CERAMIC CHIP	0.047uF	10%	25V
C77	1-163-809-11	CERAMIC CHIP	0.047uF	10%	25V
C78	1-163-141-00	CERAMIC CHIP	0.001uF	5%	50V
C79	1-163-809-11	CERAMIC CHIP	0.047uF	10%	25V
C80	1-164-182-11	CERAMIC CHIP	0.0033uF	10%	50V
C81	1-163-037-11	CERAMIC CHIP	0.022uF	10%	25V

Ref. No.	Part No.	Description		Remark	
C82	1-163-833-00	CERAMIC CHIP	0.068uF		25V
C83	1-163-038-00	CERAMIC CHIP	0.1uF		25V
C84	1-135-177-21	TANTALUM CHIP	1uF	20%	20V
C85	1-163-809-11	CERAMIC CHIP	0.047uF	10%	25V
C86	1-163-237-11	CERAMIC CHIP	27PF	5%	50V
C87	1-163-235-11	CERAMIC CHIP	22PF	5%	50V
C88	1-163-038-00	CERAMIC CHIP	0.1uF		25V
C89	1-163-263-11	CERAMIC CHIP	330PF	5%	50V
C90	1-163-077-00	CERAMIC CHIP	0.1uF	10%	25V
C91	1-163-077-00	CERAMIC CHIP	0.1uF	10%	25V
C92	1-163-077-00	CERAMIC CHIP	0.1uF	10%	25V
C93	1-163-809-11	CERAMIC CHIP	0.047uF	10%	25V
C94	1-163-809-11	CERAMIC CHIP	0.047uF	10%	25V
C95	1-126-157-11	ELECT	10uF	20%	16V
C96	1-164-695-11	CERAMIC CHIP	0.0022uF	5%	50V
C97	1-163-037-11	CERAMIC CHIP	0.022uF	10%	25V
C98	1-163-038-00	CERAMIC CHIP	0.1uF		25V
C99	1-163-809-11	CERAMIC CHIP	0.047uF	10%	25V
C110	1-136-173-00	FILM	0.47uF	5%	50V
C111	1-130-475-00	MYLAR	0.0022uF	5%	50V
C112	1-130-475-00	MYLAR	0.0022uF	5%	50V
C113	1-128-341-11	ELECT	0.56uF	20%	50V
C114	1-124-252-00	ELECT	0.33uF	20%	50V
C121	1-126-294-11	ELECT	4.7uF	20%	35V
C122	1-126-294-11	ELECT	4.7uF	20%	35V
C123	1-126-294-11	ELECT	4.7uF	20%	35V
C124	1-126-295-11	ELECT	10uF	20%	35V
C125	1-126-295-11	ELECT	10uF	20%	35V
C126	1-126-295-11	ELECT	10uF	20%	35V
C127	1-130-476-00	MYLAR	0.0027uF	5%	50V
C128	1-136-162-00	FILM	0.056uF	5%	50V
C129	1-136-162-00	FILM	0.056uF	5%	50V
C130	1-163-117-00	CERAMIC CHIP	100PF	5%	50V
C131	1-126-295-11	ELECT	10uF	20%	35V
C132	1-126-300-11	ELECT	0.47uF	20%	50V
C133	1-130-476-00	MYLAR	0.0027uF	5%	50V
C134	1-163-105-00	CERAMIC CHIP	33PF	5%	50V
C135	1-126-294-11	ELECT	4.7uF	20%	35V
C136	1-163-105-00	CERAMIC CHIP	33PF	5%	50V
C137	1-126-294-11	ELECT	4.7uF	20%	35V
C139	1-126-277-11	ELECT	100uF	20%	10V
C140	1-126-294-11	ELECT	4.7uF	20%	35V
C210	1-136-173-00	FILM	0.47uF	5%	50V
C211	1-130-475-00	MYLAR	0.0022uF	5%	50V
C212	1-130-475-00	MYLAR	0.0022uF	5%	50V
C213	1-128-341-11	ELECT	0.56uF	20%	50V
C214	1-124-252-00	ELECT	0.33uF	20%	50V
C221	1-126-294-11	ELECT	4.7uF	20%	35V
C222	1-126-294-11	ELECT	4.7uF	20%	35V

MAIN **DIVER**

Ref. No.	Part No.	Description			Remark
C223	1-126-294-11	ELECT	4.7uF	20%	35V
C224	1-126-295-11	ELECT	10uF	20%	35V
C225	1-126-295-11	ELECT	10uF	20%	35V
C226	1-126-295-11	ELECT	10uF	20%	35V
C227	1-130-476-00	MYLAR	0.0027uF	5%	50V
C228	1-136-162-00	FILM	0.056uF	5%	50V
C229	1-136-162-00	FILM	0.056uF	5%	50V
C230	1-163-117-00	CERAMIC CHIP	100PF	5%	50V
C231	1-126-295-11	ELECT	10uF	20%	35V
C232	1-126-300-11	ELECT	0.47uF	20%	50V
C233	1-130-476-00	MYLAR	0.0027uF	5%	50V
C234	1-163-105-00	CERAMIC CHIP	33PF	5%	50V
C235	1-126-294-11	ELECT	4.7uF	20%	35V
C236	1-163-105-00	CERAMIC CHIP	33PF	5%	50V
C237	1-126-294-11	ELECT	4.7uF	20%	35V
C239	1-126-277-11	ELECT	100uF	20%	10V
C240	1-126-294-11	ELECT	4.7uF	20%	35V
C310	1-126-277-11	ELECT	100uF	20%	10V
C311	1-164-232-11	CERAMIC CHIP	0.01uF		50V
C312	1-126-295-11	ELECT	10uF	20%	35V
C313	1-126-157-11	ELECT	10uF	20%	16V
C321	1-126-301-11	ELECT	1uF	20%	50V
C322	1-164-232-11	CERAMIC CHIP	0.01uF		50V
C323	1-126-277-11	ELECT	100uF	20%	10V
C324	1-163-038-00	CERAMIC CHIP	0.1uF		25V
C325	1-163-038-00	CERAMIC CHIP	0.1uF		25V
C326	1-163-081-00	CERAMIC CHIP	0.22uF		25V
C431	1-126-935-11	ELECT	470uF	20%	16V
C432	1-164-232-11	CERAMIC CHIP	0.01uF		50V
C433	1-126-157-11	ELECT	10uF	20%	16V
C501	1-163-809-11	CERAMIC CHIP	0.047uF	10%	25V
C502	1-163-235-11	CERAMIC CHIP	22PF	5%	50V
C503	1-163-219-11	CERAMIC CHIP	2PF	0.25PF	50V
C506	1-163-038-00	CERAMIC CHIP	0.1uF		25V
C509	1-163-133-00	CERAMIC CHIP	470PF	5%	50V
C511	1-163-038-00	CERAMIC CHIP	0.1uF		25V
C513	1-163-809-11	CERAMIC CHIP	0.047uF	10%	25V
C514	1-135-177-21	TANTALUM CHIP	1uF	20%	20V
C515	1-164-232-11	CERAMIC CHIP	0.01uF		50V
C516	1-163-133-00	CERAMIC CHIP	470PF	5%	50V
C517	1-163-133-00	CERAMIC CHIP	470PF	5%	50V
C518	1-163-133-00	CERAMIC CHIP	470PF	5%	50V
C519	1-163-037-11	CERAMIC CHIP	0.022uF	10%	25V
C521	1-126-277-11	ELECT	100uF	20%	10V
C522	1-164-232-11	CERAMIC CHIP	0.01uF		50V
C525	1-124-589-11	ELECT	47uF	20%	16V
C526	1-126-301-11	ELECT	1uF	20%	50V
C527	1-163-037-11	CERAMIC CHIP	0.022uF	10%	25V
C528	1-124-234-00	ELECT	22uF	20%	16V

Ref. No.	Part No.	Description			Remark
C529	1-126-277-11	ELECT	100uF	20%	10V
C530	1-126-295-11	ELECT	10uF	20%	35V
C531	1-126-925-11	ELECT	470uF	20%	10V
C533	1-126-277-11	ELECT	100uF	20%	10V
C534	1-164-232-11	CERAMIC CHIP	0.01uF	10%	50V
C535	1-164-232-11	CERAMIC CHIP	0.01uF	10%	50V
C536	1-126-157-11	ELECT	10uF	20%	16V
C537	1-163-037-11	CERAMIC CHIP	0.022uF	10%	25V
C538	1-163-133-00	CERAMIC CHIP	470PF	5%	50V
C539	1-126-294-11	ELECT	4.7uF	20%	35V
C540	1-164-232-11	CERAMIC CHIP	0.01uF	10%	50V
C541	1-125-486-11	DOUBLE LAYERS	0.22F		5.5V
C542	1-126-277-11	ELECT	100uF	20%	10V
C543	1-163-038-00	CERAMIC CHIP	0.1uF		25V
C544	1-163-038-00	CERAMIC CHIP	0.1uF		25V
C545	1-163-038-00	CERAMIC CHIP	0.1uF		25V
C546	1-163-038-00	CERAMIC CHIP	0.1uF		25V
C548	1-163-038-00	CERAMIC CHIP	0.1uF		25V
C549	1-163-133-00	CERAMIC CHIP	470P	5%	50V
C550	1-126-277-11	ELECT	100uF	20%	10V
C551	1-164-182-11	CERAMIC CHIP	0.0033uF	10%	50V
C552	1-163-133-00	CERAMIC CHIP	470PF	5%	50V
C553	1-126-157-11	ELECT	10uF	20%	16V
C554	1-126-162-11	ELECT	3.3uF	20%	50V
C555	1-163-038-00	CERAMIC CHIP	0.1uF		25V
C556	1-163-038-00	CERAMIC CHIP	0.1uF		25V
C557	1-135-177-21	TANTAL CHIP	1uF	10%	20V
C558	1-135-177-21	TANTAL CHIP	1uF	10%	20V
C559	1-164-232-11	CERAMIC CHIP	0.01uF	10%	50V
C591	1-126-925-11	ELECT	470uF	20%	10V
C592	1-163-081-00	CERAMIC CHIP	0.22uF		25V
C593	1-164-232-11	CERAMIC CHIP	0.01uF	10%	50V
C594	1-163-038-00	CERAMIC CHIP	0.1uF		25V
C595	1-163-038-00	CERAMIC CHIP	0.1uF		25V

< CERAMIC FILTER >

CF10	1-567-415-11	FILTER, CERAMIC
CF11	1-567-415-11	FILTER, CERAMIC
CF20	1-567-415-11	FILTER, CERAMIC

< CONNECTOR >

CN10 *	1-573-607-11	CONNECTOR, L TYPE 6P
CNP322	1-569-363-21	CONNECTOR, FPC 15P
CNP333 *	1-506-988-11	PIN, CONNECTOR (PC BOARD) 6P
CNP334 *	1-506-985-11	PIN, CONNECTOR (PC BOARD) 3P
CNP335	1-580-915-11	SOCKET, CONNECTOR 6P
CNP431 *	1-580-920-11	HOUSING, CONNECTOR 7P
CNP433 *	1-506-984-11	PIN, CONNECTOR (PC BOARD) 2P
CNP531 *	1-580-911-11	HOUSING, CONNECTOR 11P

Ref. No.	Part No.	Description	Remark
CNP532	1-580-907-11	PLUG, CONNECTOR	
CNP533 *	1-506-984-11	PIN, CONNECTOR (PC BOARD) 2P	
CNP534 *	1-506-985-11	PIN, CONNECTOR (PC BOARD) 3P	
CNP535 *	1-506-985-11	PIN, CONNECTOR (PC BOARD) 3P	
CNP536	1-564-187-11	PIN, CONNECTOR 1P	
		< DIODE >	
D1	8-719-800-76	DIODE 1SS226	
D10	8-719-800-76	DIODE 1SS226	
D11	8-719-989-95	DIODE 1SV154	
D12	8-719-976-31	DIODE 1SS332	
D20	8-719-800-76	DIODE 1SS226	
D21	8-719-989-95	DIODE 1SV154	
D22	8-719-976-31	DIODE 1SS332	
D60	8-719-976-31	DIODE 1SS332	
D61	8-719-800-76	DIODE 1SS226	
D62	8-719-976-31	DIODE 1SS332	
D63	8-719-400-18	DIODE MA152WK	
D320	8-719-400-18	DIODE MA152WK	
D321	8-719-800-76	DIODE 1SS226	
D322	8-719-976-83	DIODE DTZ3.6	
D431	8-719-976-31	DIODE 1SS332	
D432	8-719-976-31	DIODE 1SS332	
D433	8-719-400-18	DIODE MA152WK	
D434	8-719-977-25	DIODE DTZ9.1C	
D501	8-719-976-31	DIODE 1SS332	
D502	8-719-976-31	DIODE 1SS332	
D503	8-719-400-18	DIODE MA152WK	
D504	8-719-976-31	DIODE 1SS332	
D505	8-719-400-18	DIODE MA152WK	
D506	8-719-976-31	DIODE 1SS332	
D507	8-719-976-31	DIODE 1SS332	
D508	8-719-976-31	DIODE 1SS332	
D509	8-719-400-18	DIODE MA152WK	
D510	8-719-977-07	DIODE DTZ6.2B	
D511	8-719-977-07	DIODE DTZ6.2B	
D512	8-719-976-31	DIODE 1SS332	
D513	8-719-977-07	DIODE DTZ6.2B	
D514	8-719-977-07	DIODE DTZ6.2B	
D515	8-719-400-18	DIODE MA152WK	
D516	8-719-977-07	DIODE DTZ6.2B	
D517	8-719-104-34	DIODE 1S2836	
D518	8-719-976-31	DIODE 1SS332	
D519	8-719-977-16	DIODE DTZ7.5B	
D520	8-719-976-31	DIODE 1SS332	
D521	8-719-978-05	DIODE DTZ3.6	
D522	8-719-977-25	DIODE DTZ9.1C	
D523	8-719-977-03	DIODE DTZ5.6B	
D524	8-719-977-32	DIODE DTZ11B	
D525	8-719-976-31	DIODE 1SS332	
D526	8-719-977-16	DIODE DTZ7.5B	
D529	8-719-977-25	DIODE DTZ9.1C	
D530	8-719-400-18	DIODE MA152WK	
D532	8-719-976-31	DIODE 1SS332	
D533	8-719-977-25	DIODE DTZ9.1C	
D534	8-719-977-07	DIODE DTZ6.2B	
D535	8-719-977-16	DIODE DTZ7.5B	
D536	8-719-977-16	DIODE DTZ7.5B	
D537	8-719-977-28	DIODE DTZ10B	
		< IC >	
IC1	8-759-823-81	IC LC7216M	
IC10	8-759-201-36	IC TA7303P	
IC11	8-759-509-91	IC XRA10393F	
IC20	8-759-201-36	IC TA7303P	
IC60	8-759-246-22	IC TA8172AF	
IC61	8-759-970-89	IC BA10358F	
IC121	8-759-711-85	IC NJM4580E-D	
IC122	8-759-711-85	IC NJM4580E-D	
IC123	8-759-711-85	IC NJM4580E-D	
IC221	8-759-711-85	IC NJM4580E-D	
IC222	8-759-711-85	IC NJM4580E-D	
IC223	8-759-711-85	IC NJM4580E-D	
IC311	8-752-055-10	IC CXA1332M	
IC321	8-759-820-15	IC LC7537AN	
IC322	8-759-711-85	IC NJM4580E-D	
IC431	8-759-823-87	IC LB1638M	
IC501	8-759-155-03	IC uPD75116-GF-E47-3BE	
IC502	8-759-043-18	IC uPD75116-GF-E68-3BE	
IC503	8-759-513-42	IC X24C04SI	
IC504	8-759-940-45	IC S-8054HN-CB	
IC505	8-759-823-87	IC LB1638M	
IC506	8-759-710-82	IC NJM2406F	
		< JACK >	
J1 *	1-563-961-11	SOCKET, CONNECTOR (ANT MAIN)	
J2 *	1-563-961-11	SOCKET, CONNECTOR (ANT SUB)	
		< JUMPER >	
JR1	1-216-295-00	METAL CHIP 0 5% 1/10W	
JR60	1-216-296-00	METAL CHIP 0 5% 1/8W	
JR500	1-216-295-00	METAL CHIP 0 5% 1/10W (US, Canadian)	
JR501	1-216-295-00	METAL CHIP 0 5% 1/10W	
JR502	1-216-295-00	METAL CHIP 0 5% 1/10W	
JR503	1-216-295-00	METAL CHIP 0 5% 1/10W (US, Canadian)	
JR518	1-216-295-00	METAL CHIP 0 5% 1/10W	

MAIN **DIVER**

Ref.No.	Part No.	Description			Remark
JR522	1-216-295-00	METAL CHIP	0	5%	1/10W
JR523	1-216-295-00	METAL CHIP	0	5%	1/10W
JR527	1-216-295-00	METAL CHIP	0	5%	1/10W
JR529	1-216-295-00	METAL CHIP	0	5%	1/10W
JR548	1-216-295-00	METAL CHIP	0	5%	1/10W
		< COIL >			
L1	1-410-197-31	INDUCTOR CHIP	2.7uH		
L3	1-410-204-31	INDUCTOR CHIP	10uH		
L4	1-410-204-31	INDUCTOR CHIP	10uH		
L5	1-410-184-51	INDUCTOR CHIP	0.22uH		
L6	1-410-184-51	INDUCTOR CHIP	0.22uH		
L7	1-410-197-31	INDUCTOR CHIP	2.7uH		
L10	1-410-204-31	INDUCTOR CHIP	10uH		
L11	1-408-798-00	INDUCTOR CHIP	1mH		
L12	1-410-204-31	INDUCTOR CHIP	10uH		
L13	1-410-204-31	INDUCTOR CHIP	10uH		
L20	1-410-204-31	INDUCTOR CHIP	10uH		
L21	1-408-798-00	INDUCTOR CHIP	1mH		
L60	1-408-798-00	INDUCTOR CHIP	1mH		
L61	1-410-196-11	INDUCTOR CHIP	2.2uH		
L62	1-410-204-31	INDUCTOR CHIP	10uH		
L501	1-410-204-31	INDUCTOR CHIP	10uH		
L502	1-410-204-31	INDUCTOR CHIP	10uH		
		< TRANSISTOR >			
Q1	8-729-901-00	TRANSISTOR	DTC124EK		
Q2	8-729-901-00	TRANSISTOR	DTC124EK		
Q3	8-729-809-71	TRANSISTOR	2SK536		
Q4	8-729-901-04	TRANSISTOR	DTA114EK		
Q10	8-729-120-28	TRANSISTOR	2SC1623-L5L6		
Q11	8-729-901-04	TRANSISTOR	DTA114EK		
Q12	8-729-304-14	TRANSISTOR	2SK360-E		
Q13	8-729-920-41	TRANSISTOR	FMC3		
Q20	8-729-120-28	TRANSISTOR	2SC1623-L5L6		
Q21	8-729-901-04	TRANSISTOR	DTA114EK		
Q23	8-729-920-41	TRANSISTOR	FMC3		
Q60	8-729-120-28	TRANSISTOR	2SC1623-L5L6		
Q61	8-729-920-21	TRANSISTOR	DTC314TKH04		
Q62	8-729-920-21	TRANSISTOR	DTC314TKH04		
Q63	8-729-900-53	TRANSISTOR	DTC114EK		
Q121	8-729-920-21	TRANSISTOR	DTC314TKH04		
Q122	8-729-920-21	TRANSISTOR	DTC314TKH04		
Q124	8-729-920-21	TRANSISTOR	DTC314TKH04		
Q221	8-729-920-21	TRANSISTOR	DTC314TKH04		
Q222	8-729-920-21	TRANSISTOR	DTC314TKH04		
Q224	8-729-920-21	TRANSISTOR	DTC314TKH04		
Q311	8-729-920-56	TRANSISTOR	FMG1		
Q431	8-729-106-60	TRANSISTOR	2SB1115A		

Ref.No.	Part No.	Description			Remark
Q432	8-729-900-53	TRANSISTOR	DTC114EK		
Q433	8-729-921-48	TRANSISTOR	2SD1760F5-Q		
Q434	8-729-920-41	TRANSISTOR	FMC3		
Q501	8-729-216-22	TRANSISTOR	2SA1162-G		
Q502	8-729-216-22	TRANSISTOR	2SA1162-G		
Q503	8-729-903-10	TRANSISTOR	FMW1		
Q504	8-729-907-26	TRANSISTOR	IMX1		
Q505	8-729-903-10	TRANSISTOR	FMW1		
Q506	8-729-120-28	TRANSISTOR	2SC1623-L5L6		
Q507	8-729-216-22	TRANSISTOR	2SA1162-G		
Q508	8-729-216-22	TRANSISTOR	2SA1162-G		
Q509	8-729-216-22	TRANSISTOR	2SA1162-G		
Q510	8-729-216-22	TRANSISTOR	2SA1162-G		
Q511	8-729-900-53	TRANSISTOR	DTC114EK		
Q512	8-729-920-41	TRANSISTOR	FMC3		
Q513	8-729-920-41	TRANSISTOR	FMC3		
Q514	8-729-904-63	TRANSISTOR	DTB123YK		
Q515	8-729-904-63	TRANSISTOR	DTB123YK		
Q516	8-729-904-63	TRANSISTOR	DTB123YK		
Q517	8-729-904-63	TRANSISTOR	DTB123YK		
Q518	8-729-106-68	TRANSISTOR	2SD1615A-GP		
Q519	8-729-903-10	TRANSISTOR	FMW1		
Q520	8-729-931-07	TRANSISTOR	2SD1759F5		
Q521	8-729-921-48	TRANSISTOR	2SD1760F5-Q		
Q522	8-729-105-29	TRANSISTOR	2SA1385		
Q523	8-729-105-29	TRANSISTOR	2SA1385		
Q524	8-729-920-28	TRANSISTOR	FMG9		
Q525	8-729-921-48	TRANSISTOR	2SD1760F5-Q		
Q526	8-729-106-60	TRANSISTOR	2SB1115A		
Q527	8-729-901-04	TRANSISTOR	DTA114EK		
Q528	8-729-921-48	TRANSISTOR	2SD1760F5-Q		
Q529	8-729-921-48	TRANSISTOR	2SD1760F5-Q		
Q530	8-729-120-28	TRANSISTOR	2SC1623-L5L6		
Q531	8-729-920-41	TRANSISTOR	FMC3		
Q532	8-729-921-48	TRANSISTOR	2SD1760F5-Q		
Q533	8-729-900-53	TRANSISTOR	DTC114EK		
Q534	8-729-106-60	TRANSISTOR	2SB1115A		
Q535	8-729-120-28	TRANSISTOR	2SC1623-L5L6		
		< RESISTOR >			
R1	1-216-041-00	METAL CHIP	470	5%	1/10W
R2	1-216-049-00	METAL CHIP	1K	5%	1/10W
R3	1-216-073-00	METAL CHIP	10K	5%	1/10W
R4	1-216-049-00	METAL CHIP	1K	5%	1/10W
R5	1-216-063-00	METAL CHIP	3.9K	5%	1/10W
R6	1-216-057-00	METAL CHIP	2.2K	5%	1/10W
R7	1-216-061-00	METAL CHIP	3.3K	5%	1/10W
R8	1-216-073-00	METAL CHIP	10K	5%	1/10W
R9	1-216-049-00	METAL CHIP	1K	5%	1/10W

Ref. No.	Part No.	Description			Remark
R10	1-216-057-00	METAL CHIP	2.2K	5%	1/10W
R11	1-216-073-00	METAL CHIP	10K	5%	1/10W
R12	1-216-105-00	METAL CHIP	220K	5%	1/10W
R13	1-216-017-00	METAL CHIP	47	5%	1/10W
R14	1-216-065-00	METAL CHIP	4.7K	5%	1/10W
R15	1-216-073-00	METAL CHIP	10K	5%	1/10W
R16	1-216-073-00	METAL CHIP	10K	5%	1/10W
R17	1-216-049-00	METAL CHIP	1K	5%	1/10W
R18	1-216-121-00	METAL CHIP	1M	5%	1/10W
R20	1-216-057-00	METAL CHIP	2.2K	5%	1/10W
R21	1-216-073-00	METAL CHIP	10K	5%	1/10W
R22	1-216-105-00	METAL CHIP	220K	5%	1/10W
R23	1-216-017-00	METAL CHIP	47	5%	1/10W
R24	1-216-065-00	METAL CHIP	4.7K	5%	1/10W
R25	1-216-073-00	METAL CHIP	10K	5%	1/10W
R26	1-216-073-00	METAL CHIP	10K	5%	1/10W
R27	1-216-049-00	METAL CHIP	1K	5%	1/10W
R28	1-216-121-00	METAL CHIP	1M	5%	1/10W
R30	1-216-057-00	METAL CHIP	2.2K	5%	1/10W
R31	1-216-089-00	METAL CHIP	47K	5%	1/10W
R32	1-216-089-00	METAL CHIP	47K	5%	1/10W
R33	1-216-089-00	METAL CHIP	47K	5%	1/10W
R34	1-216-039-00	METAL CHIP	390	5%	1/10W
R35	1-216-081-00	METAL CHIP	22K	5%	1/10W
R63	1-216-845-11	METAL CHIP	100K	5%	1/16W
R64	1-216-845-11	METAL CHIP	100K	5%	1/16W
R67	1-216-073-00	METAL CHIP	10K	5%	1/10W
R68	1-216-089-00	METAL CHIP	47K	5%	1/10W
R69	1-216-057-00	METAL CHIP	2.2K	5%	1/10W
R70	1-216-073-00	METAL CHIP	10K	5%	1/10W
R71	1-216-065-00	METAL CHIP	4.7K	5%	1/10W
R72	1-216-069-00	METAL CHIP	6.8K	5%	1/10W
R73	1-216-075-00	METAL CHIP	12K	5%	1/10W
R74	1-216-057-00	METAL CHIP	2.2K	5%	1/10W
R75	1-216-061-00	METAL CHIP	3.3K	5%	1/10W
R76	1-216-061-00	METAL CHIP	3.3K	5%	1/10W
R77	1-216-065-00	METAL CHIP	4.7K	5%	1/10W
R78	1-216-039-00	METAL CHIP	390	5%	1/10W
R79	1-216-105-00	METAL CHIP	220K	5%	1/10W
R80	1-216-017-00	METAL CHIP	47	5%	1/10W
R81	1-216-683-11	METAL CHIP	22K	0.5%	1/10W
R82	1-216-049-00	METAL CHIP	1K	5%	1/10W
R83	1-216-687-11	METAL CHIP	33K	0.5%	1/10W
R84	1-216-071-00	METAL CHIP	8.2K	5%	1/10W
R85	1-216-055-00	METAL CHIP	1.8K	5%	1/10W
R86	1-216-053-00	METAL CHIP	1.5K	5%	1/10W
R87	1-216-046-00	METAL CHIP	750	5%	1/10W
R88	1-216-057-00	METAL CHIP	2.2K	5%	1/10W
R89	1-216-075-00	METAL CHIP	12K	5%	1/10W

Ref. No.	Part No.	Description			Remark
R90	1-216-073-00	METAL CHIP	10K	5%	1/10W
R91	1-216-073-00	METAL CHIP	10K	5%	1/10W
R92	1-216-683-11	METAL CHIP	22K	0.5%	1/10W
		(US, Canadian)			
R92	1-216-685-11	METAL CHIP	27K	0.5%	1/10W (E)
R110	1-216-687-11	METAL CHIP	33K	0.5%	1/10W
R111	1-216-684-11	METAL CHIP	24K	0.5%	1/10W
R112	1-216-645-11	METAL CHIP	560	0.5%	1/10W
R120	1-216-687-11	METAL CHIP	33K	0.5%	1/10W
R121	1-216-679-11	METAL CHIP	15K	0.5%	1/10W
R122	1-216-075-00	METAL CHIP	12K	5%	1/10W
		(US, Canadian)			
R122	1-216-071-00	METAL CHIP	8.2K	5%	1/10W (E)
R123	1-216-679-11	METAL CHIP	15K	0.5%	1/10W
R124	1-216-683-11	METAL CHIP	22K	0.5%	1/10W
R125	1-216-121-00	METAL CHIP	1M	5%	1/10W
R126	1-216-061-00	METAL CHIP	3.3K	5%	1/10W
R127	1-216-679-11	METAL CHIP	15K	0.5%	1/10W
R128	1-216-121-00	METAL CHIP	1M	5%	1/10W
R129	1-216-073-00	METAL CHIP	10K	5%	1/10W
R130	1-216-121-00	METAL CHIP	1M	5%	1/10W
R131	1-216-679-11	METAL CHIP	15K	0.5%	1/10W
R132	1-216-683-11	METAL CHIP	22K	0.5%	1/10W
R133	1-216-649-11	METAL CHIP	820	0.5%	1/10W
R134	1-216-683-11	METAL CHIP	22K	0.5%	1/10W
R135	1-216-679-11	METAL CHIP	15K	0.5%	1/10W
R136	1-216-683-11	METAL CHIP	22K	0.5%	1/10W
R137	1-216-649-11	METAL CHIP	820	0.5%	1/10W
R141	1-216-073-00	METAL CHIP	10K	5%	1/10W
R142	1-216-075-00	METAL CHIP	12K	5%	1/10W
R143	1-216-649-11	METAL CHIP	820	0.5%	1/10W
R144	1-216-097-00	METAL CHIP	100K	5%	1/10W
R210	1-216-687-11	METAL CHIP	33K	0.5%	1/10W
R211	1-216-684-11	METAL CHIP	24K	0.5%	1/10W
R212	1-216-645-11	METAL CHIP	560	0.5%	1/10W
R220	1-216-687-11	METAL CHIP	33K	0.5%	1/10W
R221	1-216-679-11	METAL CHIP	15K	0.5%	1/10W
R222	1-216-075-00	METAL CHIP	12K	5%	1/10W
		(US, Canadian)			
R222	1-216-077-00	METAL CHIP	8.2K	5%	1/10W (E)
R223	1-216-679-11	METAL CHIP	15K	0.5%	1/10W
R224	1-216-683-11	METAL CHIP	22K	0.5%	1/10W
R225	1-216-121-00	METAL CHIP	1M	5%	1/10W
R226	1-216-061-00	METAL CHIP	3.3K	5%	1/10W
R227	1-216-679-11	METAL CHIP	15K	0.5%	1/10W
R228	1-216-121-00	METAL CHIP	1M	5%	1/10W
R229	1-216-073-00	METAL CHIP	10K	5%	1/10W
R230	1-216-121-00	METAL CHIP	1M	5%	1/10W
R231	1-216-679-11	METAL CHIP	15K	0.5%	1/10W

MAIN **DIVER**

Ref. No.	Part No.	Description			Remark
R232	1-216-683-11	METAL CHIP	22K	0.5%	1/10W
R233	1-216-649-11	METAL CHIP	820	0.5%	1/10W
R234	1-216-683-11	METAL CHIP	22K	0.5%	1/10W
R235	1-216-679-11	METAL CHIP	15K	0.5%	1/10W
R236	1-216-683-11	METAL CHIP	22K	0.5%	1/10W
R237	1-216-649-11	METAL CHIP	820	0.5%	1/10W
R238	1-216-683-11	METAL CHIP	22K	0.5%	1/10W
R241	1-216-073-00	METAL CHIP	10K	5%	1/10W
R242	1-216-075-00	METAL CHIP	12K	5%	1/10W
R243	1-216-649-11	METAL CHIP	820	0.5%	1/10W
R244	1-216-097-00	METAL CHIP	100K	5%	1/10W
R310	1-216-049-00	METAL CHIP	1K	5%	1/10W
R311	1-216-685-11	METAL CHIP	27K	0.5%	1/10W
R312	1-216-073-00	METAL CHIP	10K	5%	1/10W
R313	1-216-073-00	METAL CHIP	10K	5%	1/10W
R314	1-216-073-00	METAL CHIP	10K	5%	1/10W
R320	1-216-089-00	METAL CHIP	47K	5%	1/10W
R321	1-216-073-00	METAL CHIP	10K	5%	1/10W
R322	1-216-049-00	METAL CHIP	1K	5%	1/10W
R431	1-216-073-00	METAL CHIP	10K	5%	1/10W
R432	1-216-065-00	METAL CHIP	4.7K	5%	1/10W
R433	1-220-149-91	METAL CHIP	2.2	10%	1/2W
R434	1-216-049-00	METAL CHIP	1K	5%	1/10W
R501	1-216-845-11	METAL CHIP	100K	5%	1/16W
R502	1-216-845-11	METAL CHIP	100K	5%	1/16W
R503	1-216-845-11	METAL CHIP	100K	5%	1/16W
R504	1-216-845-11	METAL CHIP	100K	5%	1/16W
R505	1-216-841-11	METAL CHIP	47K	5%	1/16W
R506	1-216-845-11	METAL CHIP	100K	5%	1/16W
R507	1-216-845-11	METAL CHIP	100K	5%	1/16W
R508	1-216-845-11	METAL CHIP	100K	5%	1/16W
R509	1-216-097-00	METAL CHIP	100K	5%	1/10W
R510	1-216-845-11	METAL CHIP	100K	5%	1/16W
R511	1-216-845-11	METAL CHIP	100K	5%	1/16W
R512	1-216-845-11	METAL CHIP	100K	5%	1/16W
R513	1-216-845-11	METAL CHIP	100K	5%	1/16W
R515	1-216-097-00	METAL CHIP	100K	5%	1/10W
R516	1-216-845-11	METAL CHIP	100K	5%	1/16W
R517	1-216-845-11	METAL CHIP	100K	5%	1/16W
R518	1-216-073-00	METAL CHIP	10K	5%	1/10W
R520	1-216-025-00	METAL CHIP	100	5%	1/10W
R521	1-216-841-11	METAL CHIP	47K	5%	1/16W
R522	1-216-841-11	METAL CHIP	47K	5%	1/16W
R523	1-216-841-11	METAL CHIP	47K	5%	1/16W
R524	1-216-174-00	METAL GLAZE	100	5%	1/8W
R525	1-216-089-00	METAL CHIP	47K	5%	1/10W
R526	1-216-089-00	METAL CHIP	47K	5%	1/10W
R527	1-216-174-00	METAL GLAZE	100	5%	1/8W
R528	1-216-825-11	METAL CHIP	2.2K	5%	1/16W

Ref. No.	Part No.	Description			Remark
R529	1-216-825-11	METAL CHIP	2.2K	5%	1/16W
R530	1-216-825-11	METAL CHIP	2.2K	5%	1/16W
R531	1-216-081-00	METAL CHIP	22K	5%	1/10W
R532	1-216-037-00	METAL CHIP	10K	5%	1/10W
R533	1-216-081-00	METAL CHIP	22K	5%	1/10W
R534	1-216-037-00	METAL CHIP	10K	5%	1/10W
R535	1-216-049-00	METAL CHIP	1K	5%	1/10W
R536	1-216-841-11	METAL CHIP	47K	5%	1/16W
R537	1-216-049-00	METAL CHIP	1K	5%	1/10W
R538	1-216-049-00	METAL CHIP	1K	5%	1/10W
R539	1-216-081-00	METAL CHIP	22K	5%	1/10W
R540	1-216-063-00	METAL CHIP	3.9K	5%	1/10W
R541	1-216-174-00	METAL GLAZE	100	5%	1/8W
R542	1-216-841-11	METAL CHIP	47K	5%	1/16W
R543	1-216-841-11	METAL CHIP	47K	5%	1/16W
R544	1-216-073-00	METAL CHIP	10K	5%	1/10W
R545	1-216-049-00	METAL CHIP	1K	5%	1/10W
R546	1-216-089-00	METAL CHIP	47K	5%	1/10W
R547	1-216-089-00	METAL CHIP	47K	5%	1/10W
R548	1-216-097-00	METAL CHIP	100K	5%	1/10W
R549	1-216-687-11	METAL CHIP	33K	0.5%	1/10W
R550	1-216-089-00	METAL CHIP	47K	5%	1/10W
R551	1-216-089-00	METAL CHIP	47K	5%	1/10W
R552	1-216-089-00	METAL CHIP	47K	5%	1/10W
R553	1-216-089-00	METAL CHIP	47K	5%	1/10W
R554	1-216-089-00	METAL CHIP	47K	5%	1/10W
R555	1-216-017-00	METAL CHIP	47	5%	1/10W
R556	1-216-073-00	METAL CHIP	10K	5%	1/10W
R557	1-216-089-00	METAL CHIP	47K	5%	1/10W
R558	1-216-091-00	METAL CHIP	56K	5%	1/10W
R559	1-216-089-00	METAL CHIP	47K	5%	1/10W
R560	1-216-845-11	METAL CHIP	100K	5%	1/16W
R561	1-216-845-11	METAL CHIP	100K	5%	1/16W
R562	1-216-049-00	METAL CHIP	1K	5%	1/10W
R563	1-220-150-91	METAL CHIP	680	10%	1/2W
R564	1-216-049-00	METAL CHIP	1K	5%	1/10W
R565	1-220-150-91	METAL CHIP	680	10%	1/2W
R566	1-216-057-00	METAL CHIP	2.2K	5%	1/10W
R567	1-216-041-00	METAL CHIP	470	5%	1/10W
R568	1-216-073-00	METAL CHIP	10K	5%	1/10W
R569	1-216-049-00	METAL CHIP	1K	5%	1/10W
R570	1-216-222-00	METAL GLAZE	10K	5%	1/8W
R571	1-216-206-00	METAL GLAZE	2.2K	5%	1/8W
R572	1-216-089-00	METAL CHIP	47K	5%	1/10W
R573	1-216-089-00	METAL CHIP	47K	5%	1/10W
R574	1-216-685-00	METAL CHIP	27K	0.5%	1/10W
R575	1-216-097-00	METAL CHIP	100K	5%	1/10W
R576	1-216-089-00	METAL CHIP	47K	5%	1/10W
R578	1-216-057-00	METAL CHIP	2.2K	5%	1/10W

Ref. No.	Part No.	Description			Remark
R579	1-216-041-00	METAL CHIP	470	5%	1/10W
R580	1-216-041-00	METAL CHIP	470	5%	1/10W
R581	1-216-845-11	METAL CHIP	100K	5%	1/16W (E)
R584	1-216-845-11	METAL CHIP	100K	5%	1/16W (E)
R585	1-216-097-00	METAL CHIP	100K	5%	1/10W
R586	1-216-073-00	METAL CHIP	10K	5%	1/10W
R587	1-216-059-00	METAL CHIP	2.7K	5%	1/10W
R588	1-216-073-00	METAL CHIP	10K	5%	1/10W
R589	1-216-057-00	METAL CHIP	2.2K	5%	1/10W
R590	1-216-845-11	METAL CHIP	100K	5%	1/16W
R591	1-216-049-00	METAL CHIP	1K	5%	1/10W
R592	1-218-279-11	METAL GLAZE	12	5%	1/2W
R593	1-218-279-11	METAL GLAZE	12	5%	1/2W
R594	1-216-065-00	METAL CHIP	4.7K	5%	1/10W
R595	1-216-841-11	METAL CHIP	47K	5%	1/16W
R596	1-216-841-11	METAL CHIP	47K	5%	1/16W
R597	1-216-845-11	METAL CHIP	100K	5%	1/16W
R598	1-216-845-11	METAL CHIP	100K	5%	1/16W
R599	1-216-073-00	METAL CHIP	10K	5%	1/10W
R600	1-216-057-00	METAL CHIP	2.2K	5%	1/10W
R601	1-216-049-00	METAL CHIP	1K	5%	1/10W
		< VARIABLE RESISTOR >			
RV1	1-238-604-11	RES, ADJ, CARBON 220K			
RV60	1-238-604-11	RES, ADJ, CARBON 220K			
RV61	1-238-601-11	RES, ADJ, CARBON 22K			
RV62	1-238-600-11	RES, ADJ, CARBON 10K			
		< SWITCH >			
S10	1-572-272-11	SWITCH, SLIDE (FM DIVIERSITY)			
S11	1-572-272-11	SWITCH, SLIDE (MAIN/SUB)			
S501	1-572-272-11	SWITCH, SLIDE (POWER SELECT)			
S502	1-572-272-11	SWITCH, SLIDE (9KHz/10KHz) (E)			
		< BUZZER >			
SP501	1-529-078-11	BUZZER, PIEZOELECTRIC			
		< TRANSFORMER >			
T60	1-404-955-11	TRANSFORMER, IF			
		< TUNER >			
TU1	1-465-687-11	FRONT END, FM			
TU2	1-465-688-11	TUNER UNIT (MW)			
		< VIBRATOR >			
X1	1-567-848-11	VIBRATOR, CRYSTAL (7.2MHz)			
X60	1-579-279-11	VIBRATOR, CERAMIC (19KHz)			
X501	1-567-821-11	VIBRATOR, CRYSTAL (4.19MHz)			

Ref. No.	Part No.	Description			Remark
X502	1-567-775-11	VIBRATOR, CERAMIC (4.19MHz)			
**********					
	* 1-639-453-11	REEL BOARD			
		**********			
		< PHOTO REFLECTOR >			
PH411	8-719-988-14	PHOTO REFLECTOR PR-11-B			
PH412	8-719-988-14	PHOTO REFLECTOR PR-11-B			
		< TRANSISTOR >			
Q411	8-729-904-07	TRANSISTOR FMG2			
		< RESISTOR >			
R411	1-216-097-00	METAL CHIP	100K	5%	1/10W
R412	1-216-097-00	METAL CHIP	100K	5%	1/10W
R413	1-216-190-00	METAL GLAZE	470	5%	1/8W
**********					
	* 1-639-454-11	PL BOARD			
		********			
PM901	1-454-461-11	SOLENOID, PLUNGER			
**********					
	* 1-639-452-11	SENS BOARD			
		**********			
		< CAPACITOR >			
C421	1-163-081-00	CERAMIC CHIP	0.22uF		25V
		< CONNECTOR >			
CNP421	1-573-006-11	CONNECTOR, FPC (1.0MM) (ZIF) 7P			
CNP422 *	1-506-998-11	PIN, CONNECTOR (PC BOARD) 2P			
CNP423 *	1-564-708-11	PIN, CONNECTOR (SMALL TYPE) 6P			
		< DIODE >			
D421	8-719-976-31	DIODE 1SS332			
		< PHOTO INTERUPTER >			
PH421	8-719-987-53	PHOTO INTERRUPTER GP1S37			
		< TRANSISTOR >			
Q421	8-729-902-99	TRANSISTOR DTC114TK			

SENS POWER RST

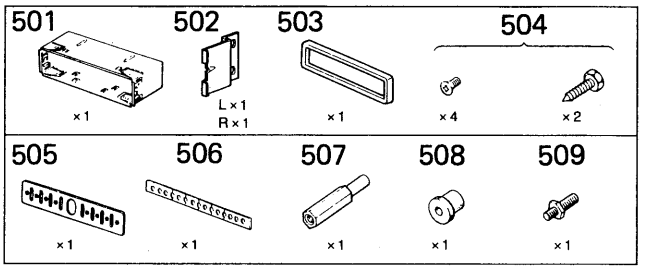
Ref. No.	Part No.	Description			Remark
		< RESISTOR >			
R421	1-216-186-00	METAL GLAZE	330	5% 1/8W	
R422	1-216-186-00	METAL GLAZE	330	5% 1/8W	
R423	1-216-049-00	METAL CHIP	1K	5% 1/10W	
**********					
*	1-640-209-11	POWER BOARD			
		***********			
		< CAPACITOR >			
C915	1-130-483-00	MYLAR	0.01uF	5% 50V	
C916	1-130-483-00	MYLAR	0.01uF	5% 50V	
C917	1-124-343-00	ELECT	2200MF	20% 16V	
C918	1-130-483-00	MYLAR	0.01uF	5% 50V	
C919	1-124-589-11	ELECT	47uF	20% 16V	
		< CONNECTOR >			
CN902 *	1-580-913-11	PLUG, CONNECTOR 6P			
		< DIODE >			
D903	8-719-970-02	DIODE 1SR139-400			
D904	8-719-945-59	DIODE DSA3A4			
		< THERMISTOR >			
THP901	1-809-148-11	THERMISTOR, POSITIVE			
THP902	1-809-148-11	THERMISTOR, POSITIVE			
**********					
*	1-640-205-11	RST BOARD			
		*********			
		< DIODE >			
D527	8-719-987-41	DIODE LC-150Y-CD			
D528	8-719-987-41	DIODE LC-150Y-CD			
		< RESISTOR >			
R577	1-216-039-00	METAL CHIP	390	5% 1/10W	
		< SWITCH >			
S503	1-572-474-11	SWITCH, TACTIL (RESET)			
**********					

Ref. No.	Part No.	Description	Remark
		MISCELLANEOUS	
		*************	
6	1-573-539-11	CONNECTOR (WITH F.P.C)	
36	1-590-511-11	CORD (WITH CONNECTOR) (ANT)	
37	1-590-525-11	CORD (WITH CONNECTOR)	
126	1-635-519-12	PC BOARD, FLEXIBLE	
127 *	1-563-470-11	HOUSING, CONNECTOR 2P	
225 *	1-563-470-11	HOUSING, CONNECTOR 2P	
CN901 *	1-573-384-11	CONNECTOR	
F1	1-532-575-XX	FUSE 3.15A	
F2	1-532-452-XX	FUSE 1A	
HP901	1-543-800-21	HEAD, MAGNETIC (PLAYBACK)	
M901	X-3344-136-3	CAPSTAN MOTOR SUB ASSY	
M902	X-3362-826-1	GEAR ASSY, MOTOR	
M903	X-3362-835-1	MOTOR BLOCK ASSY	
S504	1-570-883-11	SWITCH, PUSH (2 KEY) (DPO/DPI)	
S901	1-572-765-11	SWITCH, MICRO (CASSETTE HALF)	
S902	1-572-397-11	SWITCH, ROTARY SLIDE	
**********			
		ACCESSORIES & PACKING MATERIALS	
		*******************************	
	1-465-698-11	REMOTE COMMANDER (RM-X30) (E)	
	1-465-698-41	REMOTE COMMANDER (RM-X30) (US, Canadian)	
	1-590-503-11	CORD (WITH CONNECTOR)	
*	3-355-207-01	CARDBOARD (E)	
	3-367-590-01	COLLAR	
	3-368-943-01	BRACKET (CH) (Canadian)	
*	3-370-502-01	INDIVIDUAL CARTON (US, Canadian)	
*	3-370-504-01	CUSHION (UPPER)	
*	3-370-505-01	CUSHION (LOWER)	
*	3-371-645-01	INDIVIDUAL CARTON (E)	
	3-372-003-01	CAP	
	3-753-331-21	MANUAL, INSTRUCTION (ENGLISH, FRENCH) (US, Canadian)	
	3-753-331-61	MANUAL, INSTRUCTION (ENGLISH, SPANISH, CHINESE) (E)	
	3-753-332-21	MANUAL, INSTRUCTION (ENGLISH, FRENCH) (US, Canadian)	
	3-753-332-61	MANUAL, INSTRUCTION (ENGLISH, SPANISH, CHINESE) (E)	
**********			

HARDWARE LIST

Ref. No.	Part No.	Description	Remark
#1	7-627-553-18	SCREW, PRECISION +P 2X2	
#2	7-627-553-28	SCREW, PRECISION +P 2X2.5	
#3	7-627-554-28	SCREW, PRECISION +P 2X5 TYPE1	
#4	7-627-556-78	SCREW, PRECISION +P 2.6X6 TYPE1	
#5	7-621-770-87	SCREW +PTT 2.6X5 (S)	
#6	7-621-773-86	SCREW +PTT 2.6X4 (S)	
#7	7-685-103-19	SCREW +P 2X5 TYPE2 NON-SLIT	
#8	7-685-205-19	SCREW +KTP 2X8 TYPE2 NON-SLIT	
#9	7-627-852-38	SCREW, PRECISION +P1.7X1.8TYPE3	
#10	7-627-554-07	SCREW, PRECISION +P 2X2.2	
#11	7-628-253-00	SCREW +PS 2X4	
#12	7-621-255-65	SCREW +P 2X10	
#13	7-627-850-18	SCREW, PRECISION +P 1.4X2.5	
#14	7-627-850-67	SCREW, PRECISION +P 1.4X4	
#15	7-624-104-04	STOP RING 2.0, TYPE -E	

MOUNTING HARDWARE



Ref. No.	Part No.	Description	Remark
501	3-323-219-01	FRAME, FITTING	
502	3-370-129-01	CASE	
503	3-367-591-01	SPRING, FITTING	
504	X-3320-524-1	SCREW ASSY (A)	
505	3-323-217-01	HOLDER, BUSHING	
506	3-310-655-01	SUPPORT (ND), FITTING	
507	3-323-210-01	ADJUSTOR, STUD BOLT	
508	3-349-410-01	BUSHING	
509	3-323-209-01	BOLT (4-5), STUD	

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SUPPLEMENT-1

File this supplement-1 with the Service Manual.

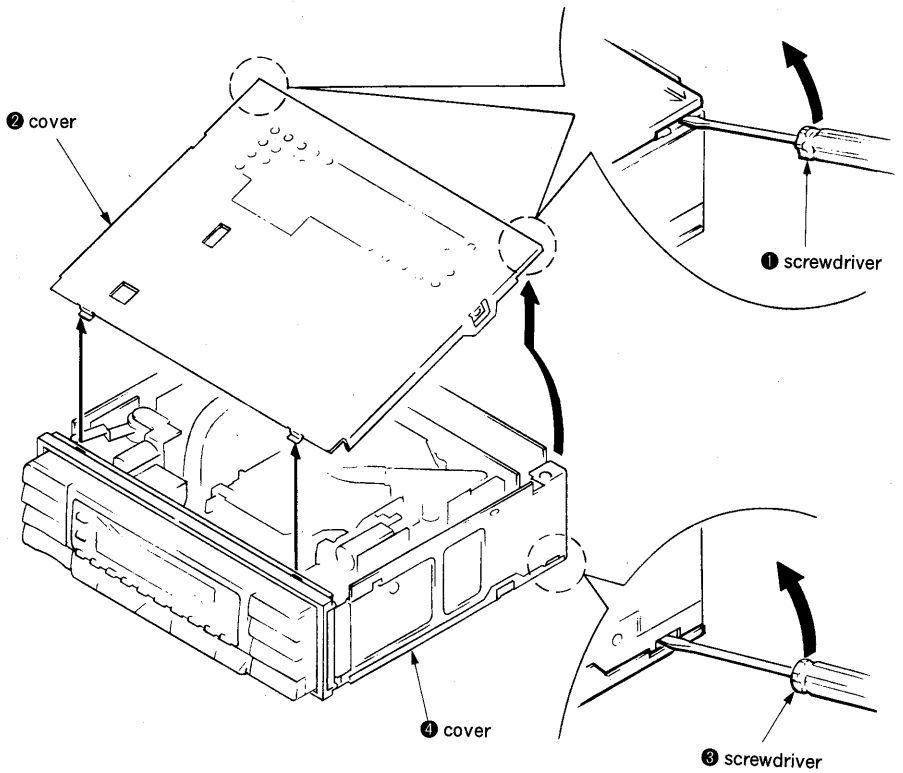
· Replacement Procedures for the M903 (Motor Block Assy)

REPLACEMENT PROCEDURES FOR THE M903 (MOTOR BLOCK ASSY)

1. REMOVAL

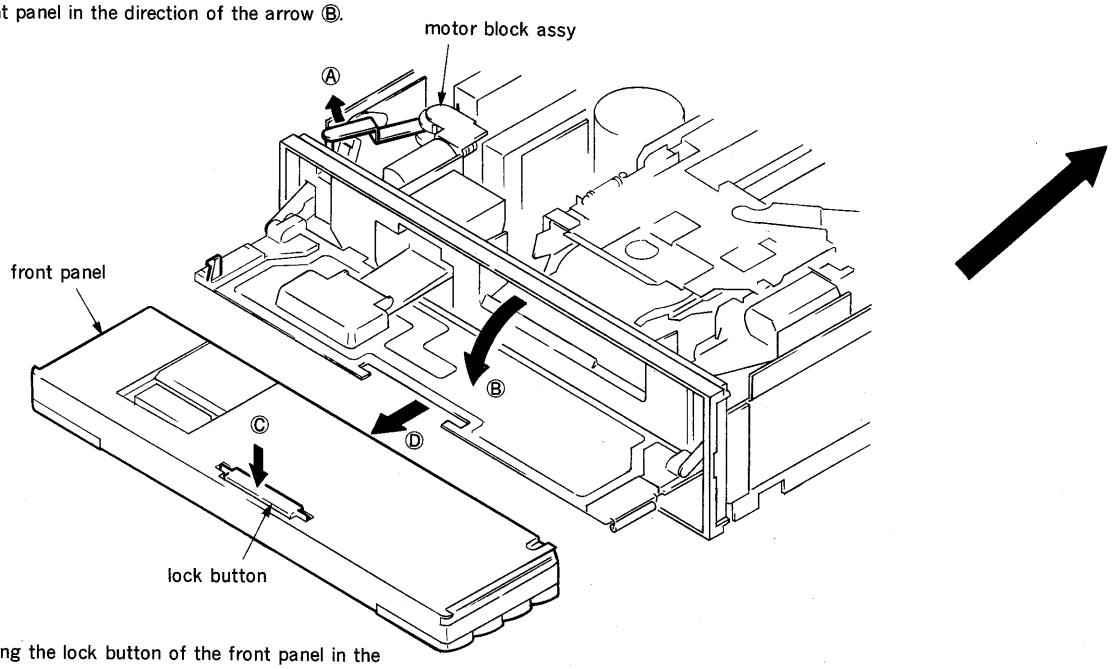
Note: Follow the disassembly procedure in the numerical order given.

1-1. COVER



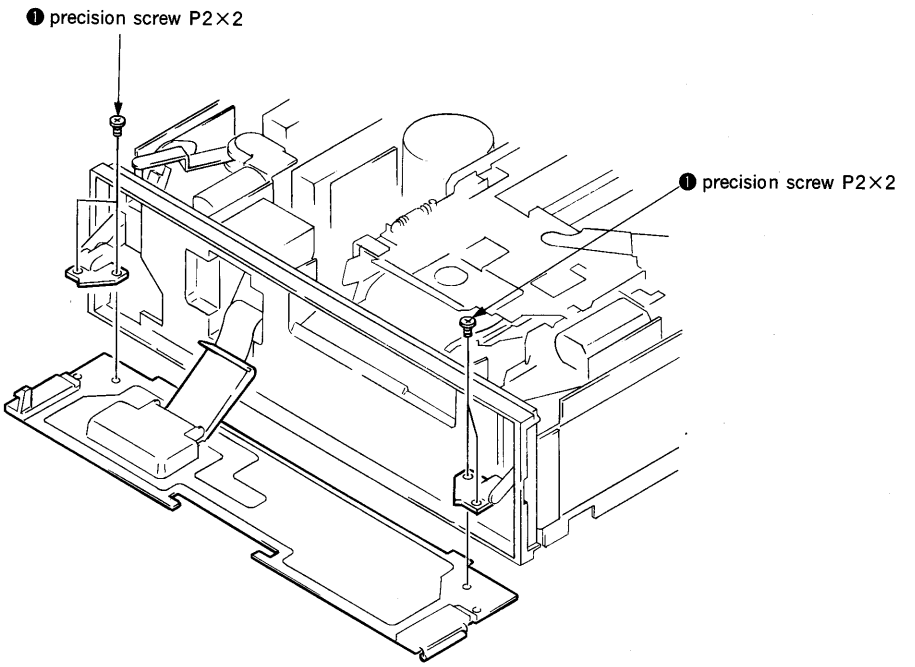
1-2. FRONT PANEL

❶ Push the lever of the motor block assy in the direction of the arrow Ⓐ and undo the claws of the front panel.
Open the front panel in the direction of the arrow Ⓑ.



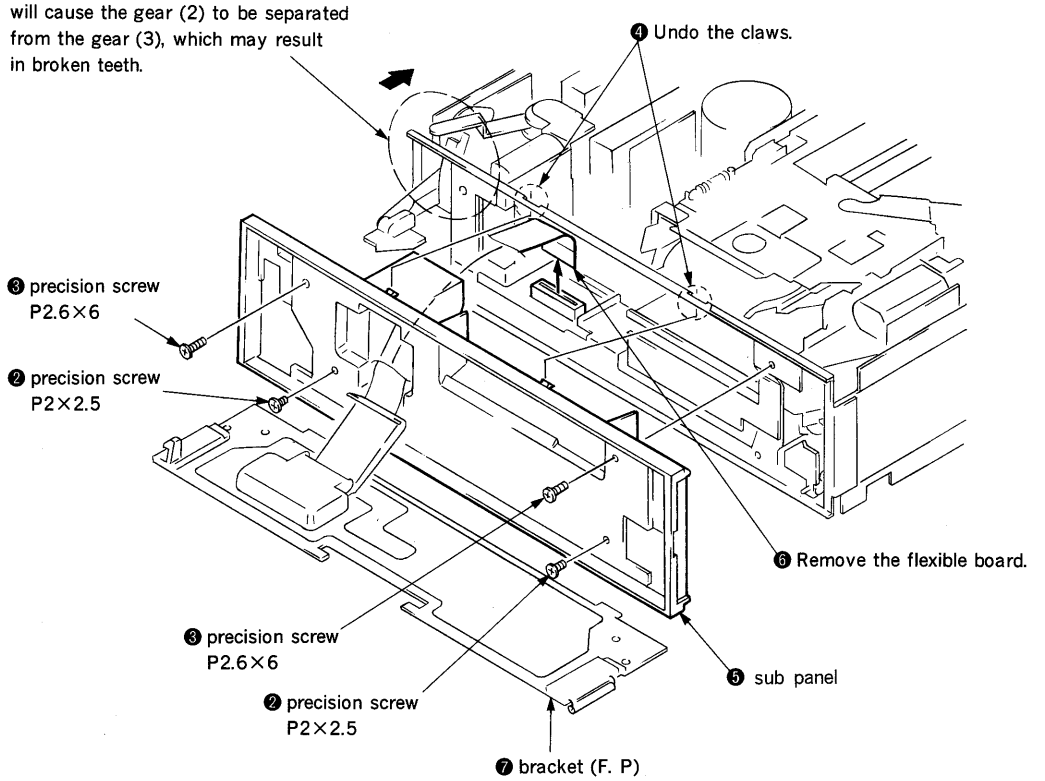
❷ While pushing the lock button of the front panel in the direction of the arrow Ⓒ, slide the front panel in the direction of the arrow Ⓓ and remove it.

1-3. BRACKET (F. P), SUB PANEL

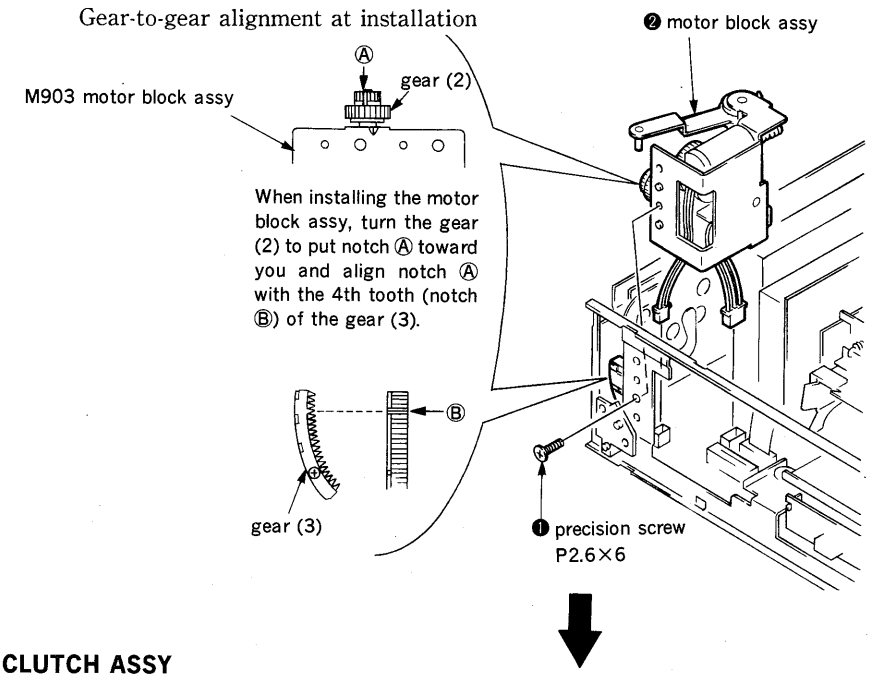


Continued on next page

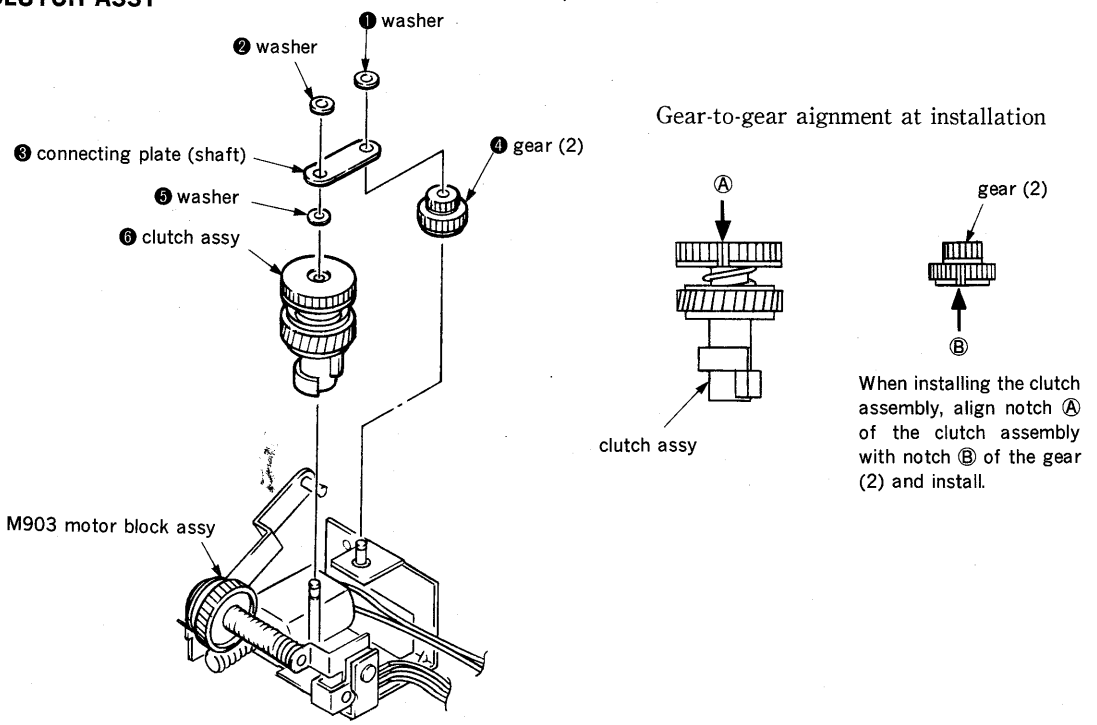
Caution : Any deformation of the motor block mounting portion in the arrowed direction will cause the gear (2) to be separated from the gear (3), which may result in broken teeth.


❹ Undo the claws.
❸ precision screw P2.6×6
❷ precision screw P2×2.5
❻ Remove the flexible board.
❸ precision screw P2.6×6
❷ precision screw P2×2.5
❺ sub panel
❼ bracket (F. P)

1-4. M903 MOTOR BLOCK ASSY


Gear-to-gear alignment at installation
❷ motor block assy
Ⓐ
gear (2)
M903 motor block assy
When installing the motor block assy, turn the gear (2) to put notch Ⓐ toward you and align notch Ⓐ with the 4th tooth (notch Ⓑ) of the gear (3).
Ⓑ
gear (3)
❶ precision screw P2.6×6

1-5. CLUTCH ASSY



2. ASSEMBLY

- Reverse the removal procedures to assemble.
- After assembly, open and close the front panel with a hand and make sure that it may open and close smoothly.

If the gears sound clicking by improper engagement, there may be the following two reasons:

(1) Any deformation of the motor block mounting portion of the chassis in removal of BRACKET(F. P), SUB PANAL.

⇩

Correct the chassis.

(2) Too high clutch assy torque.

⇩

Replace the motor block assy or clutch assy.

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CORRECTION-1

Correct your service manual as shown below.

☛ : **indicates corrected portion.**

Page	INCORRECT			CORRECT	
	No.	Part No.	Description	Part No.	Description
67	7	3-367-489-01	COVER (FLEXIBLE)	3-367-488-01	COVER (CONNECTOR)
	8	3-367-488-01	COVER (CONNECTOR)	3-367-489-01	COVER (FLEXIBLE)

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CORRECTION-2

Correct your service manual as shown below.

____ (Under line) : indicates corrected portion.

Page	INCORRECT			CORRECT		
	Ref. No.	Part No.	Description	Ref. No.	Part No.	Description
82		3-367-590-01	COLLER		3-370-129-01	CASE
83	502	3-370-129-01	CASE	502	3-367-591-01	SPRING, FITTING
11	503	3-367-591-01	SPRING, FITTING	503	3-367-590-01	COLLER

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